PERCEPTION AND PRODUCTION OF ENGLISH FRICATIVES BY HAUSA SPEAKERS

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ABSTRACT

The present study investigates the production and perception of the English fricatives /v/, /θ/ and /ð/ in initial and final positions at the words level by the Hausa ESL learners. Five masters' students from the University of Malaya participated in the study. The objectives of the research were to investigate and identify the difficulties faced by Nigerian Hausa speakers of English in the production and perception of fricative sounds of English, and to study the relationship between the perception and production of second language sounds. The data were collected through two types of tests consisting of perception and production tests. The perception tests comprised three tasks; Identification, AX discrimination and 3 Alternative Forced Choice (3AFC) discrimination tasks. The analyses involved descriptive statistics. The results of the perception tests showed that most of the respondents were able to differentiate English labio-dental fricative and dental fricatives from voiced bilabial stop and alveolar stops accurately. The identification test results showed that the respondents could identify English /v/, /θ/ and /ð/ quite easily as the accuracy of all the respondents is 90%. It is shown in the AX discrimination and a 3AFC discrimination tests that the respondents could discriminate the English fricatives /v/, /θ/ and /ð/ quite well. In the production test, the results of the study showed that the position of the /v/, /θ/ and /ð/ sounds play an important role in their pronunciation. The findings revealed that the pronunciation of /v/, /θ/ and /ð/ in word-final position was more problematic than in word-initial position. The results confirm the correspondence between the production and perception of sounds. The respondents who obtained better scores in the perception tests also had relatively better scores in the production test. Therefore, the Speech Learning Model by Flege (1995) about the correspondence between perception and production of L2 phonemes is verified.

ABSTRAK

Kajian ini mengkaji pengeluaran dan persepsi bunyi geseran Bahasa Inggeris /v/, /θ/ dan /ð/ pada kedudukan awal dan akhir oleh penutur Hausa. Lima pelajar sarjana dari Universiti Malaya telah mengambil bahagian dalam kajian ini. Objektif kajian ini adalah untuk mengkaji dan mengenal pasti masalah yang dihadapi oleh penutur Hausa dari Nigeria dalam pengeluaran dan persepsi bunyi geseran bahasa Inggeris dan juga untuk mengkaji hubungan di antara persepsi dan pengeluaran bunyi bahasa kedua. Data dikumpulkan melalui 2 jenis ujian yang terdiri daripada ujian persepsi dan pengeluaran. Ujian persepsi melibatkan 3 tugasan; Pengenalan, diskriminasi AX dan diskriminasi 3 alternatif pilihan. Analisis melibatkan deskriptif statistik. Keputusan ujian persepsi menunjukkan bahawa kebanyakan responden dapat membezakan bunyi geseran bibir-gigi dan bunyi geseran gigi dengan bunyi letupan bersuara dua bibir dan bunyi letupan gusi. Keputusan ujian pengenalan menunjukkan bahawa responden dapat mengenal pasti bunyi /v/, /θ/ dan /ð/ Bahasa Inggeris dengan agak mudah kerana ketepatan jawapan responden ialah 90%. Ujian diskriminasi AX dan ujian diskriminasi 3AFC juga menunjukkan bahawa responden boleh mendiskriminasi dengan baik bunyi geseran /v/, /θ/ dan /ð/ bahasa Inggeris. Dalam ujian pengeluaran, hasil kajian itu menunjukkan bahawa kedudukan bunyi /v/, /θ/ dan /ð/ memainkan peranan penting dalam sebutan mereka. Hasil kajian menunjukkan bahawa sebutan /v/, /θ/ dan /ð/, pada akhir kata lebih bermasalah berbanding pada-awal kata. Keputusan mengesahkan hunungan di antara pengeluaran dan persepsi. Responden yang mendapat skor yang lebih baik dalam ujian persepsi juga mendapat markah yang baik dalam ujian pengeluaran. Oleh itu, Model Pembelajaran Peruturan (*Speech Leraning Model*) oleh Flege (1995) mengenai hubungan di antara persepsi dan pengeluaran bunyi dalam Bahasa kedua disahkan.

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DEDICATION

This dissertation is dedicated to my father Malam Musa Maiunguwa, my mother Hajiya Fatima Adamu and the entire Maiunguwa's family.

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LIST OF ABBREVIATION

BBC: British Broadcasting Cooperation

CAH: Contrastive Analysis Hypothesis

CE: Contact English

CV: Consonant Vowel

CVC: Consonant Vowel Consonant

CVV: Consonant Vowel Vowel

EFL: English as a Foreign Language

EL: English Language

ESL: English as a Second Language

FM: Feature Model

FM: Frequency Modulation

L1: First Language

L2: Second Language

MDH: Markedness Differential Hypothesis

NE: Nigerian English

NigE: Nigerian English

PAM: Perceptual Assimilation Model

RP: Received Pronunciation

SAE: Standard American English

SBE: Standard British English

SLA: Second Language Acquisition

SLM: Speech Learning Model

SNE: Standard Nigerian English

UNESCO: United Nations Educational Scientific and Cultural Organization

VOA: Voice of America

3AFC: 3 Alternative Forced Choice

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CHAPTER 1

INTRODUCTION

1.0. Introduction

Language may be briefly defined as *"A system of arbitrary vocal symbols by which thought is conveyed"* (Hughes, 1962, p. 6). Language is often said to be a means of communication among individuals who share a common code (Yule, 1985). The codes that individuals share are in form of elements of a system. In traditional view of language, words are put together to form sentences. Language is arbitrary. There is no intrinsic necessity for any word to mean what it does, or for any language to have the structure it has (Kraft & Kraft, 1973).

Phonology is a branch of linguistics that deals with the way in which the sounds of a language work in that particular language (Sani, 2005). Every language of the world has an independent phonological system. Reflecting on different types of sounds that language has, the various possible combinations of these sounds as composed to form a word and the likely changes that may take place in such a process under such circumstances. Phonology is very much related to phonetics as both basically deal with sound, and a knowledge of phonetics is the fundamental requirement for the study of any phonology (Sani, 2005). As indicated, every language has a unique phonology. The phonology of one language will never be the same as that of another language.

The perception and the production of non-native sounds is a widely researched subject, as second language learners often have difficulties pronouncing and perceiving the non- native sounds of the target language. Pronunciation plays an important role in communication in a second language (L2). No matter how rich our lexicon in a second language is and how familiar we are with the structures and rules of the L2, it is not possible to convey our messages accurately without proper pronunciation, rhythm, and

intonation. In short, pronunciation is an important aspect of language that makes our speech comprehensible and intelligible to native speakers.

Many second language learners desire to speak the target language like a native speakers (Munro & Derwing, 1995). They consider pronunciation of the language to be the main indicator of how much they know about the language itself. The main idea behind this belief is that second language learners are primarily judged by native speakers based on their ability to accurately produce the target language sounds using appropriate intonation and rhythm. Therefore the more similar one's pronunciation is to that of a native speaker, the more likely a native speaker will label the speech as comprehensive and intelligible (Munro & Derwing, 1995).

Second language learners find it difficult to achieve a native-like pronunciation. The majority of them encounter several embarrassing situations when they are misunderstood due to their pronunciation. Apart from linguistics abilities, there are several factors affecting second language pronunciation accuracy should be engaged into considerations such as exposure to second language, age, and first language influence (Wong, 1987).

English is from the Indo-European (Germanic) language family (Fulk, 2008). Some linguists reason that the English language is not culturally fashionable to English native speakers to a further extent, but it is more of a language for global culture as it continues to produce (Graddol, 1997). English came to Nigeria as a result of colonialism which brought about religion (Christianity), trade and administration which eventually brought Nigeria under the control of the British government till October 1st, 1960 (Olumola, 1982). The English language, despite being a foreign language to Nigerians, attained a significant status in the Nigerian society. It can be seen as the most essential treasure from the British to Nigeria (Eyisi, 2007). Today English is adopted as Nigeria's official language, and thus considered as a language of instruction

in the school, the courts, the national assembly and broadcasting on national radio and television stations. Despite its acceptability and popularity in Nigeria, it remains a second language to Nigerians for every Nigerian has his/her own native language such as Hausa, Igbo, Yoruba, Tiv, Fulfulde, Kanuri etc.

Hausa is one of about 130 Chadic languages of the Afro-asiatic phylum (Greenberg, 1963). It is spoken mainly in northern Nigeria and southern Niger (Jaggar, 2010). The exact number of Hausa speakers is not known, but possibly some 30 million people speak Hausa as a first language and a similar number of speakers use it as a second or third language. Established Hausa migrant communities are found as far away as Ghana, Libya and Sudan. Hausa is the most important widespread West African language, rivaled only by Swahili as an African lingua Franca.

There are various factors that contribute to the errors L2 learners produce, particularly in the part of pronunciation. Differences amongst learners' native languages and the L2 play a role in those difficulties. In addition to variation in the sound system of both languages, language transfer and age also play a strong role in the acquisition process (Binturki, 2008). However, pronunciation is not the only issue L2 learners have to deal with as grammatical, syntactic, vocabulary and morphological features are considered obstacles in the process of L2 learning (Messiha, 1985).

Perception and production are two processes of language acquisition which have always been of great interest to researchers, with regard to both L1 and L2 acquisition. The relationship between speech perception and speech production is intertwined. The claim has often been made that, speech perception of learners, especially in L2 setting of the phonetic segments, affects the efficiency with which the segment is pronounced (e. g. Flege, 1995; Munro & Derwing, 1995; Schmid & Yeni-Komshian, 1999).

Productions which conform to the norm of the standard variety adopted are regarded as accurate, whereas those which deviate from the norms are often given the

label “problems”. It has often been argued that most of the problems can be attributed to mother-tongue influence. In that segments, their non-existence in the learners’ mother tongue often cause production difficulties. The segments shared by both the native language and target language phonemic inventories do not pose great production difficulties. However, other factors may also play a role, such as the universal difficulty of the English dental fricatives /θ/ and /ð/ (the sounds are very rare in the world’s languages and are thus extra difficult) (Maddieson, 1984).

Perceptual problems are also rampant in L2 acquisition. Chan (2007) argues that the perception problems L2 speaker’s face may be due to their misconception of word pronunciation other than their shortcomings in the discrimination of acoustic differences. Learner’s mental representation for perception may be mediated by predetermined word pronunciations. Input of acoustic signals may be converted to forms which fit their distorted mental representation. As a result, incorrect perceptual judgments may likely occur. Mother tongue interference, which has been maintained as a main contributor to production problems, is argued to have played a minimal role in perception (Chan, 2007a).

1.1. Statement of the Problem

Despite the fact that Nigerian English has been for many centuries the language of instruction in the Nigerian schools, Nigerian Hausa speakers of English still have difficulties in the production of some of the fricative sounds. Hausa speakers of English tend to mispronounce those English sounds or interchange with those present in their native language. This results in confusing listeners and renders the communication unintelligible. Fricative sounds of English are not an exception to such problematic phenomena to Hausa speakers of English. For example, Hausa speakers of English have problems with the production and perception of /v/, /θ/ and /ð/. A large population of L2

learners is of the opinion that the main difficulty they experience when speaking English is pronunciation. Mostly, they consider articulation as the key source for their communication difficulties (Derwing & Rossiter, 2002; Al-Kahtany, 1995 as cited in Binturki, 2008). Second language learners often have difficulties in pronouncing and perceiving the non-native sounds of the target language. Akeredolu-Ale (2005) discloses that, the spoken component of Nigerian English speakers is "appalling". She also identifies /θ/ and /ð/ sounds among other sounds that Nigerian speakers face difficulty in producing and perceiving. Besides speaking, the speakers also face difficulties in listening as others speak to them. Furthermore, she discloses that, the sounds are most often substituted by /t/ and /d/. She attributes, such to the transfer hypothesis from Nigerian Pidgin English into conventional English.

1.2. Purpose of the Study

The aim of this study is to investigate and identify the difficulties faced by Nigerian Hausa speakers of English in the production and perception of fricative sounds of English in order:

1. To examine the relationship between perception and production of English /v/, /θ/ and /ð/ among Hausa speakers.
2. To identify the areas that appear problematic to Hausa speakers of English.

1.3. Research Questions

The research is aimed at answering the following questions:

i. How do Nigerian Hausa ESL learners perceive /v/, /θ/ and /ð/ in initial and final positions at the word level?

ii. How do Nigerian Hausa ESL learners produce /v/, /θ/ and /ð/ in initial and final positions at the word level?

iii. What is the relationship between the perception and production of /v/, /θ/ and /ð/ by Nigerian ESL speakers?

1.4. Significance of the Study

The importance of this research is to make Nigerian Hausa students of English aware of the problems that they have in pronouncing and perceiving the English fricative sounds, and why there are such problems in their production and perception. This study will also be useful to Hausa speakers since it will draw their attention over an aspect they are deficient so as to work hard and remedy their deficiency.

1.5. Scope and Limitations

This study is limited to investigating the difficulties Hausa learners encounter when producing and perceiving English fricative sounds. Thus, the study will only focus on the fricative sounds /v/, /θ/ and /ð/ in the initial and final positions. This study does not deal with sentences, but only words in isolation. The reason is that we want to pay attention to the target sounds that is, whether the participants produce and perceive the sounds correctly or substitute the target sounds with other sounds. The target sounds are /v/, /θ/ and /ð/ in initial and final word positions.

The study is based on five (three males and two females) Hausa speakers who are studying at the University of Malaya. The reason for choosing Hausa speakers from the University of Malaya is because of the limitation of time. Further, the reason for choosing them as my respondents is that when we arrived in Malaysia, my friends and I realized that whenever we speak English with other people of different linguistic

background be it among students, lecturers, in the restaurants or at the markets, people have difficulty in understanding us. Some of them sometimes asked us to repeat so that they could comprehend us correctly. It is in view of this that, I became interested to conduct a research of this kind in order to find out the reasons behind these difficulties.

1.6. Thesis Organization

The current study will be presented in five chapters. Chapter 1 outlines the introduction to the research, problem statement, purpose of the study, research questions, the significance of the study and scope and limitation. Chapter 2 reviews the Nigerian English, NE consonants and vowels, functions and classification of Nigerian English, structure and language policy of Hausa language and empirical literature in relation to the current study. Chapter 3 presents a detailed explanation for the methodology of the research. Chapter 4 discusses the results of the data analyses. Chapter 5 summarizes the findings of the study and it provides limitations, implications, recommendations and future research.

CHAPTER 2

LITERATURE REVIEW

2.0. Introduction

In this chapter, attention will be given to views, opinions, concepts and findings of the past researchers in order to provide justification for my problem statement and to have direction in the pursuance of my study. The chapter also discusses past studies on perception and production of language sounds. It also includes NE, functions and classification of NE, NE consonants and vowels, theoretical framework and structure and language policy of Hausa. The theory adopted in this research is Speech Learning Model (SLM) established by Flege (1995).

2.1. Theoretical Background

A large body of empirical research on the acquisition of second language phonetics/phonology demonstrates that various linguistic factors like the position of the target sound in words, context in which the sounds is produced, L1 influence and universal markedness, and non-linguistic factors like age at point of acquisition, motivation, input and learning environment play an important role in the acquisition of L2 consonants. Several theories of L2 acquisition have been developed to observe and predict the difficulties that second language learners face in the acquisition of sounds of the target language. The Contrastive Analysis Hypothesis claims that the differences between L1 and L2 cause errors in second language acquisition (Lado 1957, Wardhaugh 1970). Thus, the CAH declares L1 as the main source of difficulties in the acquisition of an L2. Markedness Differential Hypothesis (Eckman 1977, 2004) predicts that among

the elements which are different between L1 and L2, the one which is more marked will be relatively more difficult to learn than the one which is less marked or unmarked.

The hypothesis regarding patterns of perceptual assimilation of non-native speakers to native speakers predicts the difficulties adult L2 learners have in perception and production of non-native phonetic categories (Flege, 1992; Best, 1995). The speech Learning Model (SLM) and Perceptual Assimilation Model (PAM) explained the difficulties non-native sounds causes to learners (Flege, 1995; Best, 1995).They further observed that the extend of the similarity/dissimilarity between native and non-native categories in sound production between one language to another shows how native sounds are perceived while speech learning model at neutral position in relation to similarity. They are also of the view that sounds that are easier to be assimilated into the native sounds are more challenging than those that are poorly assimilated. The perceptual assimilation models are distinct from speech learning models for non-native sounds differences. While the speech learning model is to more focused on prediction of single second language sounds. Later research either provides empirical support or suggests amendments to these models, or presents new ideas about the difficulties faced by learners in the acquisition of sounds of L2. Some of the studies point out some very important factors which may affect the acquisition of L2 phonemes. Some of these factors are experience, input and learning environment.

The theory adopted in this research is Speech Learning Model (SLM) established by Flege (1995). A number of models of SLA have been presented to explain the process of acquisition of second language sounds. The speech learning model (Flege, 1995), the perceptual assimilation model (Best, 1994, 1995), and feature model (Brown, 1998, 2000) are some of the most well-known models of second language acquisition. The speech learning model predicts a correspondence between

perception and production while other models (e.g. PAM, FM, etc.) primarily account for the perception of L2 learners (Syed, 2013).

Flege (1995) developed the 'Speech Learning Model' (SLM), a perceptual framework which seeks to explain production errors and foreign accent by means of perceptual errors. According to the SLM, L2 learners will have more difficulty in acquiring second language sounds that are similar to a sound of their native language, while new phonemes will present fewer problems for the learner. This mechanism, referred to as 'Equivalence Classification', impedes the construction of a category for an L2 phoneme or allophone when it has a similar counterpart in the L1. The L2 learner perceives the sounds as equivalents and will substitute the L2 sound with the L1 sound, which prevents the learner from creating a new category. Instead, these sounds will be classified in a single phonetic category, as opposed to two separate categories, and therefore bear resemblance to each other in production. A classic example that illustrates this, as described in (Eckman et al., 2003) and referred to as 'allophonic split', is the contrast between Spanish and English in regard to the voiced alveolar stop /d/ and the voiced dental fricative /ð/. In Spanish, these two phonemes have allophonic status, as they are in complementary distribution, whereas in English they represent two separate phonemes that can occur in the same environment. Therefore, this phoneme contrast is known to be extremely challenging for Spanish L2 learners of English and this often translates itself in mispronunciation. The speech learning model is used to study a correlation between production and the perception of second language sounds. The present study is to determine how fit the SLM can account for the production and perception of English fricatives by Hausa ESL learners.

2.2. Nigerian English

Kachru (1992) has described English language in terms of three concentric circles: The Inner Circle – Australia, UK, New Zealand, USA and Canada. The Outer Circle (ESL) – Nigeria, Kenya, Bangladesh, Zambia, India, Ghana, Pakistan, Singapore, Malaysia, Tanzania, Sri Lanka and Philippines. The Expanding Circle (EFL) – Nepal, Indonesia, China, Japan, Egypt, Saudi Arabia, Korea, Israel, Russia, South Africa, Taiwan, Zimbabwe and Caribbean Islands.

English has been spoken in Nigeria since 18th century (Owolabi, 2012). It was quite spoken in Nigeria as a means of communication and it was the first language as pidgin and also an auxiliary language that is the mixture of Nigerian languages and English. This happened during the trade contact between the British and our chiefs, the chiefs were selling their subjects to slavery. The only means of transaction at that period was English because the British neither understood our native languages nor did we understand English.

There are a lot of factors responsible for the spread of English in Nigeria. These are: trade, education, religion and administration (Taiwo, 2009).

(1) Trade: During slave trade the only necessary communicative language was English, because trade will not take place without communication. So, in such a situation it is only the superior in the business that enforces his language as a means of transacting the business. In such a situation, the inferior only accept the prestigious language so as to maintain the recognizable status. This is what happened between English and Nigerian languages.

(2) Education: By the time they had a base in Nigeria, the colonial masters then said they needed to educate the Nigerians, and then the grounds for religion and administration were laid. The education given to Nigerians was basically to read and

write in English. They were not taught how to invent, they had to be self-reliant, so grammar schools, missionary schools were set up. Later, English was used as the means of communication and instruction.

(3) Religion: White people came to Nigeria not only as colonialist or traders, but they came as missionaries with Christianity. In the process people especially in the southern part of Nigeria learnt how to communicate with white people in English. This is the reason why most of the people in the south speak better English than the northerners even if they did not go to school.

(4) Administration: At that time everything was in English irrespective of whatever language you speak. English was the language of administration. This, English was the medium of communication between colonial masters and Nigerian chiefs because Nigerians were ruled through traditional rulers. Even though there were some little or minor consideration of Hausa in the north. The language play a good role in administrative processes.

Ogu (1992) quoted Walsh (1967) as saying that: "The varieties of English spoken by educated Nigerians, no matter what their language, have enough features in common to mark off a general type, which may be called Nigerian English" (p. 88). 'Nigerian English' has been defined as 'a kind of English written and spoken by Nigerians' (Eka, 2000: 70) or 'English the way Nigerians write and speak it' (Okoro, 2004: 167).

Odumuh (1987, 1993) recognized the existence of NE. He claimed that NE is one of the varieties of the New English and its existence as this moment could be regarded as special variety of Standard English and it could be identified as NE. Jibril (1982) sees NE with distinct features different from that of other West African English. Bokamba (1982, 1991) accepts the existence of NE and describes it as West African Vernacular English.

Bamgbose (1982) recognizes the existence of NE and also he identifies and analyzes some of it is identifying features. Several other linguists (e.g., Jowitt 1991; Adetugbo 1979; Adegbija 1989; Goke-Pariola 1993; Salami 1968; Atoye 1991; Kujore 1958; Bamiro 1991, 1994; Adekunle 1974; Balogun 1980; Kachru 1986, 1992a, 1992b as cited in Ajani, 2007) have written and passing references to this variety of EL.

Contrary to the above submission or understanding of NE, some scholars are of the view that the existence of NE is in reality. Salami (1968) is of the opinion that, what is identified with NE is "errors of usage" not a variety of Standard English. Theo Vincent (1974) understands NE as bad English, and not a variety of British English. Both Salami and Vincent express their dismay over teachers in Nigerian institutions who classified such English as a variety of Standard English which according to them is characterized by a wide difference from the imported English from British.

In contrast, Odumuh (1987) classified NE as a new variety of English that is developing all over the world and he provides a theoretical ground for his justification. That is the development of variation studies. He goes further to provide some characteristics which differentiate NE with other varieties of English language in other parts of the world which according to him are syntactic, semantic, lexical and phonological in both written and spoken context. He also emphasizes the standardization of NE from those of local acceptability to international intelligibility.

Furthermore, Odumuh sub categorized NE into 3 namely Igbo, Yoruba and Hausa which according to him are the major influences of NE. He then suggests two ways in the approaches of NE which according to him are: mode which he explain as written and spoken. The second is educational attainment (which he describes as educational standard, semi standard and non-standard).

According to Akere (1982) NE is a combination of different grammatical structures that are indigenous to Nigerians, with pronunciation that is distinct in nature

as well as the application of some lexical items. Similarly, Adekunle (1985) applies the theory of linguistic variation and language change where he discovered that linguistic and geographical factors are responsible for the changes in the usage of English language in Nigeria.

Jibril (1982) laments that there is no uniformity in the assessment of Nigerian linguistics which describes as "citizen status" of NE. He argues that for NE to be qualified as NE it does not have to possess some characteristics before it could be qualified as NE since according to him British English has local varieties and features. This further confirmed Odumuh's argument that NE need not to have some characteristics before it could be considered as NE.

For Bamgbose (1982) the question on the existence of NE is meaningless since it is a known fact that in every language contact situation an L2 is subjected to be influenced by the environmental factors. He proves his argument by stressing that the existence of varieties of English has been acknowledged by linguists internationally. Therefore, according to him it is not a debatable issue. He describes three approaches to usages in NE as creativity, deviation and interference.

Efforts have been made several times to refer to the range of English written and spoken by Nigerians. The assumptions variety from Standard British English (SBE), to Standard American English (SAE), to Educated West African English (EWE), and then, to Standard Nigerian English (SNE) (Babatunde, 2002).

On the other hand, studies by Adetugbo (1977, 2004), Banjo (1971, 1993), Jibril (1979, 1982), Jowitt (1991), Eka (1985, 2000), Josiah (2009, 2011), and Awonusi (2004), among many others, have sufficiently shown that using RP as a spoken model for Nigerians is just an application that lacks basic reason. Meanwhile, the range of English spoken in Nigeria (just as in any other L2 setting) cannot be said to be truly

British. In fact, judging from obtainable documentary evidences so far, most Nigerians do not speak British English (Josiah et al. 2012).

There is no uniform accent of English spoken throughout Nigeria. In fact, the diversity of the different kinds of English in the country is so great that NE is usually divided into several sub-varieties. Based on the observation that the native language of Nigerian speakers of English characteristically influences their accent in English, NE sub-varieties corresponding to different ethnic groups have been proposed (e.g. Jibril 1986; Jowitt 1991 as cited in Gut, 2008).

2.2.1. Functions of English in Nigeria

On achievement of independence in Nigeria, English simultaneously developed to give rise to the major medium for inter-ethnic communication (Taiwo, 2009). Some of the functions of English in Nigeria include the following: official language, medium of instruction in the schools and lingua franca. Today English is adopted as Nigerian's official language, and thus considered as a language of instruction in schools, the courts the national assembly and broadcasting on national radio and television stations. It is also serves as a lingua franca.

2.2.2. Nigerian English Consonants and Vowels

Nigeria has the greatest internal diversity due to her size, the diversity of backgrounds of her British settlers as well as the period of British penetration (Bobda, 1995). For instance, Yoruba English in West is clearly distinguishable from Igbo English in the east, while northern Hausa English in general are even more clearly distinct from all southern Nigerian accents.

Notwithstanding the regional diversity highlighted above, some phonetic and phonological similarities across national boundaries can be hypothesized from contacts that took place in the region during the colonial period, especially between certain countries. The contacts between Nigeria and Sierra Leone, despite the long geographical distance between them, provide a good example. Sierra Leonean Krios are descendants of the Yoruba, one of the major tribes of Nigeria. The first Yoruba lesson was taught, not on Yoruba-land, but in Free-town. A large portion of the Nigerian elite was educated at Fourah Bay College in Sierra Leone. There has been a massive exchange of teachers between Nigeria and Sierra Leone.

The particular influence of Nigerian English in the region is partly due to the fact that many regional British colonial structures were based in Nigeria, mainly in Lagos, and many civil servants from The Gambia, Sierra Leone, Ghana and Cameroons had visited, or lived in Nigeria, or were Nigerian.

Bobda (2007) has acknowledged that NE shares many existing rules of English phonology (although some other rules of NE apply differently when compared to the standard accents of Inner Circle Englishes). The phonologies of NE are influenced by a variety of factors: interlocutors' level of education, socio-cultural background, psychological factors, socio-political learnings, religious affiliations, ethnic peculiarities/mother-tongue interference, social background, personal idiosyncrasies, and so on. These all combine to influence the various pronunciation patterns that are noticeable in NE. Thus, it is possible for a professor or any other highly educated Nigerian to speak non-standard English and sometimes revert to pidgin in an attempt to converge to the speech of his audience or listeners, if they are mesolect; or to adopt an acrolectal variety if his audience is considered to be an educated group (Banjo, 1996; Udofot, 2004; Lamidi, 2007). As an illustration, the communication between a lawyer and his semi-literate client, a governor and his illiterate audience, an educated

traditional ruler and his illiterate subjects an elitist clergy and his mixed congregation, or a university don and his students or other scholars will display various pronunciation patterns as a result of the attempt to either converge or diverge to the level of his interlocutors as the case may be. Thus, it is the desire to accommodate to a large extent the various interlocutors in the Nigerian environment that gives rise to much of the varieties differentiation that characterize the phonologies of NE.

A number of different approaches have yielded a large number of literature on NE phonology (Brosnahan 1958; Banjo 1971; Adetugbo 1977, 2004; Jibril 1979, 1982; Bamgbose 1982; Eka 1985; Awonusi 2004; Jowitt 1991, 2000; Udofot 1997, 2004, 2007; Gut 2004; Aladeyomi and Adetunde 2007; Bobda 2007). From all indications, studies in phonology have been particularly problematic. First, the criteria for standardization of already delineated varieties usually face the challenge of validity in terms of currency, social acceptability and international intelligibility. Apart from the yet unsettled question of varieties differentiation, there have been noticeable problems of disharmony on the agreeable number of phonemic inventories that can accurately describe the standard spoken English in Nigeria, and thereby distinguish it from all other Englishes around the globe. This problem repeatedly surfaces in many scholarly articles on spoken NE resulting in the crisis of discordance.

The obvious truth is that NE is standardizing variety, ultimately yielding to an emerging national standard. This position is in contrast to Adetugbo's (2004) remark that NE already has a standard phonology. If such a standard exists at all, it is in isolation, not uniform, and therefore assumptive and nebulous. Josiah and Babatunde (2011) concluded that many linguists for more than half a century says phonemes of spoken Nigerian English are discordance, uncoordinated, nebulous and, therefore, not yet standardized.

Most of the features common to all African accents of English are in fact shared by many other New Englishes. These features include spelling pronunciations and analogical deviations. For example, as a spelling pronunciation, the rendering of '*g*' as /ʤ/ in gear and target in Nigerian English (Fakoya 1989) is not attested in neigbouring Cameroon.

Hausa English in Nigeria and Ghanaians replace RP /ʌ/ with /a/, the typical West African substitute, in the whole of Gambia, Sierra Leone, Cameroon, and in the greater south of Nigeria, is /ɔ/. It contrast with /a/ which is the systematic substitute in east and southern Africa. Many features of Nigerian English are somehow found, in various degrees, in Sierra Leone and in Cameroon, making it difficult for an outsider to distinguish a Nigerian from natives of the latter countries (Bobda, 2000).

It is striking to see the degree of similarity between some English pronunciation features of countries that may not have any apparent particular affinity. Some similarities between NE and Sierra Leonean English, Ghanaian English and Hausa English in Nigeria, Ghanaian English, Nigerian Hausa English, East African English and South African English, and East African English are cases in point.

The similarities between Nigerian English and Sierra Leone English, at least, can be explained by the close links between Nigeria and Sierra Leone in the colonial days. One of these similarities is the unique pattern of restructuring of RP /ɜ:/ in some words in *ir* and *er*. The general African renderings of RP /ɜ:/ with orthographic *ir* and *er* are either /ɛ/ or /a/. Nigerians and Sierra Leoneans are unique in producing /ɔ/ for a limited class of words with these graphemes; this class of words includes *first* almost systematically pronounced in these countries as /fɔs(t)/, but also very often *person, bird, third* /pɔsin, bɔd, tɔd/.

East African English and Hausa English in Nigeria have in common the simplification of consonant clusters by vowel epenthesis, while other African English

speakers do the simplification by consonant deletion. The two accents also share the tendency to replace RP /ɜ:/ by /a/ across the board, while other African accents have /ɛ/ also across the board, or /a/, /ɛ/ or /ɔ/ depending on the orthographic representation.

Nigerian Hausa English, Ghanaian English, South African English and East African English have in common the replacement of English /ʌ/ by /a/. East African English, Ghanaian English and Nigerian Hausa English share two main features: the replacement of RP /ʌ/ by /a/ and the replacement of /ə/ by /a/ in final syllables not only for orthographic *er* as in many varieties, but also for *or, our, ure, ous*, etc.

It would be interesting to speculate on these unexpected similarities between accents of geographically distant countries and regions. Some of the similarities may have historical reasons. For instance, Harris (1996) attributes the occurrence of /a/ for /ʌ/ in Southern and East Africa (contrasting with the widespread /ɔ/ in West Africa) to the fact English was transported to those regions later than elsewhere, when the *strut-fronting* process (Wells, 1982) gradually changing RP /ʌ/ to /a/ was already taking place in Britain. The same explanation may hold for accent of northern Nigeria, where the British penetrated later in the South. Awonusi (1986) goes even further, attributing southern Nigerian /ɔ/ to the accent of the first Scottish teachers (who indeed came earlier), and northern /a, ʌ/ to accent of British teachers from RP backgrounds in the South. The occurrence of /a/ in Ghana, whose contacts with English are very old as seen earlier, can be seen as one of the features in which Ghanaians distinguish themselves as speakers of 'good' English.

Explanations for other similarities are more speculative. For instance, can it be that the deviation in the direction of a sound tends to trigger other deviation in the same direction? More concretely, can it be that, for example, the replacement of RP /ʌ/ by /a/ in East African English or in Nigerian Hausa English makes it more appealing to also replace /ɜ:/ by /a/ everywhere, or final syllable /ə/ in a wider range of contexts than

expected? Then what about the common vowel epenthesis in East Africa and Northern Nigeria? Does the substractum of Bantu languages and Hausa, respectively, make the accents concerned more prone to the process than the other African languages of Cameroon, southern Nigeria, Ghana, etc.? What about the common prevalence of /s, z/ as substitutes for /θ, ð/? Indeed, a lot of research is still needed in this domain.

2.2.2.1. Consonants

The major areas of divergence of phonemes between Standard British English and those of Nigerians are in the manner of articulation (Oladimeji, 2013). Many consonantal sounds in Nigerian English are similar to those obtained in Standard British English. Despite the similarities some sounds such as the dental fricatives /θ/ and /ð/ appear problematic to Nigerian speakers of English. Substitution also occurred in the pronunciation of /θ/ and /ð/ to /t/ and /d/, and /z/ and /s/ among Hausa speakers of English (Josiah & Babatunde, 2011).

Efforts have been made by various scholars to describe the consonantal sounds system in Standard Nigerian English, and these opinions are collated. Adetugbo (2004) notices that Nigerian English consonant sounds do not meaningfully differ with RP. Other researchers (Awonusi 2004; Jowitt 1991; Eka 1985; Jibril 1982); have the observations that sounds like /tʃ, ʒ, ŋ, h, d, l, θ, g, z, t, f, ð, s, v,/ are differently pronounced by diverse ethnic groups in Nigeria due to orthographic environment, phonological environment, exposure to favourable linguistic environment, educational level, principle of accommodation, mother tongue interference and social background (Ajani 2007; Udofot 2004; Banjo 1996 as reported by Josiah and Babatunde, 2011).

2.2.2.2. Vowels

Nigerian English pronunciation is characterized by differences in the pronunciation of English sounds. For instance long /ɪ:/ and short /ɪ/ are pronounced as /i/ by Nigerian speakers of English. This denotes the length of the vowel sound mid-way between the sounds. While /ɑ:/ and /æ/ which are known as back vowel and front vowel /æ/ are realized as /a/ in most cases. In RP /ɛ/, / ɜ:/ and /e/ appear as /ɛ, e:, e/ when articulated by Nigerian speakers just like /u:/ and /ʊ/ in RP articulation which appear as /ʊ/ and sometimes /u:/. The mid-back vowel /ɔ:/ and /ɒ/ of RP occur /ɔ/ and in rare cases as /ɒ/ in Nigerian English. Mid-front vowel /ɜ:/ together with the mid-central vowels /ʌ/ and /ə/ are replaced with /ǎ, ɛ:, ə:, e, ɔ, a, e:, ɒ/ in Nigerian English and sometimes /ɜ:, ʌ, ə/ (Banjo, 1996; Bobda, 1995 as reported by Josiah & Babatunde, 2011).

Udofot, 2004; Adetugbo, 2004; Banjo, 1996; Bobda, 1995 observed that three of the English diphthongs /ɔɪ/, /aɪ/, and /aʊ/ remain unchanged when pronounce by Nigerian speakers, while two of the diphthongs /əʊ/ and /eɪ/ are pronounced as monophthongs e.g. /ɔ, o/ and /e:, e/. None of the centering diphthongs /ʊə, eə, ɪə/, seem to be a common feature of standard Nigerian English phonemes, in many cases. /ɪə/ is articulated as /ɪe, ɪa / and sometimes /ɪə /; RP /eə/ is articulated as /ɛ, e:, ɛə, ɛ:/ and /ʊə / is realized as /ua, ɔ, oa, uɔ, uɒ, ɒa/ and occasionally /ɷə/ and /ʊə/ respectively.

Triphthongs are absent in Nigerian English. Though in most cases it is produced as vowel sequences (Udofot, 2004; Banjo, 1996; Jowitt, 1991).

2.3. The Hausa Language

Hausa is one of about 130 Chadic languages of the Afro-asiatic phylum (Greenberg, 1963). It is spoken mainly in northern Nigeria and southern Niger (Jaggar, 2010). The exact number of Hausa speakers is not known, but possibly some 30 million people

speak Hausa as a first language and a similar number of speakers use it as a second or third language. Established Hausa migrant communities are found as far away as Ghana, Libya and Sudan. Hausa is the most important widespread West African language, rivaled only by Swahili as an African lingua Franca. Hausa is more closely related to Arabic and Hebrew (also members of the Afro-asiatic family) than are most of the rest of the languages of sub-Saharan Africa. Hausa borrowed a lot of vocabulary from Arabic (Kraft & Kraft, 1973).

There are several distinct Hausa dialects, most of them centering on a major Hausa city (Katsina, Zaria, Kano, Zinder, Sokoto, etc). Though it is possible to make a good case for the desirability of studying any of the two or three of the other dialects, the Kano dialect is the one customarily taught to foreigners. The majority of the grammatical, lexicographical, and pedagogical studies depend on the Kano dialect, and majority of the written literature in Hausa is in this dialect as well (Kraft & Kraft, 1973).

Hausa serves as a lingua franca in northern Nigeria. Hausa enjoys some official recognition as a language spoken in legislative houses in many states in the north, language of instruction at junior primary classes and the official language of the regional media. Many local and international media broadcast in Hausa. The international media broadcasting in Hausa include Radio Tehran, Radio France international, and China radio, VOA, BBC and Deutsche welle and Radio Moscow (Jaggar, 2001).

Furthermore, Bamgbose (2001) used population and spread alongside other sociolinguistic factors to indicate that, Hausa language is one of the three languages that are spoken by about 70% of the Nigerian population, either as first or second language.

The written Hausa began centuries before the colonial rule. Since early 17th century, Hausa has been written in Ajami, the Arabic letters that were used to represent

the language in writing. There is no standard or uniform system of Ajami writing, and therefore people who are literate in Arabic read and write Hausa using the letters base on the norm suitable to them or common in the society. The current Hausa orthography is called *boko,* a Latin based alphabets introduced by the British colonial rule in 1930. This system of writing had undergone a number of changes and adjustments over the decades. The most recent changes were those affected in UNESCO (Bamako, 1973), where clusters and other important changes were adopted and standardized in the Hausa orthography.

2.3.1 The Structure of Hausa

There are a lot of sounds in English which do not exist in Hausa such as /v, θ, ð/ in the words *van*, *think* and *that*. Similarly, there are quite a number of sounds in Hausa which are not found in English, such as /ɓ, ɗ, ƙ / in the words *yumɓu* (clay), ɗa (son), *baƙo* (quest) (Sani, 2005).

Basically, a syllable in Hausa is of two structural types. There are open and closed syllables. An open syllable is composed of a consonant followed by a vowel which, in Hausa can be long, short or a diphthong. It is represented as CV/CVV. A closed syllable, on the other hand, is made up of a consonant followed by a short vowel and another consonant respectively. It is represented as CVC. In both types of syllable, the first consonant is technically known as the onset, the following vowel as the nucleus or syllabic and, the final consonant in the case of closed syllable, as the coda (Sani, 2005).

Hausa is a tonal language with three lexical tones: a falling tone (ˆ), a low tone (ˋ) and a high tone which is not marked.

2.3.2. Hausa Consonant Sounds

In standard Hausa, investigation reveals that there are a total number of thirty four (34) consonant sounds (Sani, 2005) as shown in Table 2.1.

Table 2.1: Hausa Consonant Chart

	Bilabial	Palatalized Bilabial	Alveolar	Retroflex	Post-Alveolar	Palatal	Velar	Labio-Velar	Labialized Velar	Palatalized Velar	Glottal	Palatalized Glottal
Stops	b		t d				k g		kw gw	kj gj	ʔ	ʔj
Implosive	ɓ			ɗ								
Ejective			Ś				ƙ		Ƙw	Ƙj		
Nasal	m		n			ɲ	ŋ					
Fricative	Φ	Φj	s z		ʃ						h	
Affricate					tʃ dʒ							
Lateral			l									
Trill/Roll			r									
Flap				ɽ								
Approximant						j		w				

Those consonants placed on the left hand side of a column are 'voiceless', those on the right hand, 'voiced' and those in the middle being 'neutral'.

Adapted from Sani (2005, p. 19)

The phonemic inventory of Hausa lacks several sounds that exist in the English language inventory and vice-versa. Hausa speakers have difficulties in the learning of English sounds that are absent in their inventory. In such cases, Hausa learners of ESL might substitute for the new sounds with the most harmonic sounds from their native language system. The Hausa consonant inventory lacks these three (3) consonant

sounds that the English language consonant inventory has, which are /θ/, /ð/, and /v/ (Sani, 2005). These sounds are considered to be the hardest to acquire by Hausa ESL speakers. Hence, in the language learning process, Hausa ESL learners might substitute these sounds by similar ones that do not exist in the Hausa language inventory. Learning difficulties and errors in performance are highly expected when the L2 system differs from the learner's L1 (Wilkins, 1972).

These sounds /v/, /θ/, and /ð/, have no equivalence in the Hausa language phonemic inventory, therefore, Hausa ESL learners substitute them with the most closely-related ones that Hausa has, which are the voiced labio-dental fricative /v/, voiced interdental fricative /ð/, and voiceless interdental fricative /θ/. A common occurrence at the segmental level is replacement, by which we mean the substitution of a specific second language phoneme by another phoneme, generally one that happens in the first language phoneme inventory of the speaker. Replacement can result, for instance, from the absence of a native equivalent for certain second language phoneme. It can remain often subject to variation, such as in the second language production of English interdental fricatives (Hanulikova & Weber, 2010). The substitution phenomenon is a common production and perception strategy for L2 learners.

2.3.3. Hausa Vowel Sounds

There are 13 vowels in the language. Out of the 13 vowels, there are 5 short, 5 long and 3 diphthongs (Sani, 2005). These are orthographically written as: short *a, o, i, u, e,* and long *aa, oo, ii, uu, ee,* diphthong *ai, au, ui.* They are phonemically represented as short /a/ /ɛ/ /ɪ/ /ɔ/ /ʊ/, long /aː/ /ɛː/ /ɪː/ /ɔː/ /ʊː/ and diphthong /ai/ /aʊ/ /ʊi/.

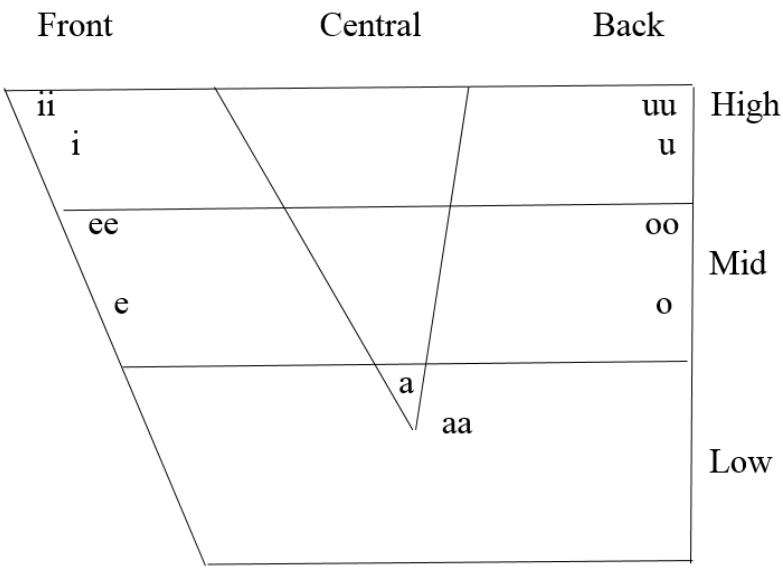

Figure 2.1: Hausa Vowels Chart

Adapted from Sani (2005, p. 22)

2.4. The Production of Sounds by Nigerian ESL Speakers

Since not all languages have the same sound system, many languages besides Hausa lack /v/, /θ/, and /ð/ in their phonological systems. As a result, ESL learners encounter difficulties in learning English sounds that are absent from their first languages.

Wachuku (2004) conducted a study on Igbo and he proves that, the Igbo language lacks the dental fricatives /θ/ and /ð/, therefore Igbo ESL speakers have problem in producing and perceiving these sounds. The effect of this production difficulty have an adverse effect on the perception of the native speakers of the sounds. This is against the Igbo or Yoruba ESL speaker's situation as they have the same perception and production potentialities.

Awonusi (2007) expressed that perception and production difficulties in English pronunciation by L2 users and learners, are due to some certain factors. While perception deals with listening or discrimination, production concerns with sound articulation. Ofulue (2007) indicates that, skills for effective pronunciation is a prerequisite for intelligibility in an L2 situation. This happens also with no predisposition to the supposition that, provided speech tends to be a natural

phenomenon, therefore, it require less effort as needed in writing and reading. As as such, significant attention need not to be given to the skill. Ballard (2007) bearing in mind that since human language materializes concomitantly with speech, then the speech provides us with versatility as well as instant means of communication.

Iyere (2013) discloses that many of the Nigerian speakers of English have limited understanding in relation to the ability to speak English as adequately as linguists do. Most of the speakers of the language in the Nigerian society take English speaking for granted assuming that, speaking and understanding the language seems to be natural as they breathe in air.

The majority of the studies conducted on speech abilities of Nigerian speakers shows that Nigerian speakers, especially the educated group have been able to achieve competence in the area. Their achievements are associated to the series of education levels, training and motivation they went through (see Eka 1985, Jibril 1982 and Jowitt 1991 among others). Many Nigerian students are naturally unaware of the existence of the differences of sounds between English and first languages. Often, an entirely new sound is easily perceived as alien and once a speaker can perceive sound he/she is on the way of being able to pronounce it. On the other hand, if he/she cannot hear it, then the problem of perception need to be addressed before further step could be faced in relation to articulation.

There are many researchers discussing pronunciation difficulties by ESL learners. Most studies that researcher (e.g. Akpan et al. 2012; Emeka-Nwobia, 2013; Iyere, 2013; Oladimeji, 2013) have done on Nigerian ESL learner's pronunciation difficulties were focused on making an analysis of learners' mistakes to spot areas of difficulties. Moreover, further studies have focused on certain sounds like the voiced interdental fricative /ð/ and voiceless interdental fricative /θ/. However, none of the studies that can be found have discussed in depth all factors that might lead to

pronunciation difficulties. Several studies have suggested that /v/, /θ/ and /ð/ would be problematic for Nigerian ESL learners (Emeka-Nwobia, 2013), due to the non-existence of such a phoneme in many Nigerian languages.

Emeka-Nwobia (2013) conducted a research on the phonological errors of Nigerian broadcasters. The study revealed that Nigerian broadcasters were inclined to make errors in the process of their duties. Such errors are due to the fact that majority of the sounds are absent in their native languages. They substitute the sounds with the ones that are available in their phonemic inventory of their languages. The phoneme that the study focused on are /θ/, /ð/, /ʒ/, /ʤ/, /z/, /t/, /ə/ and /o/ in various word positions. The news slots were ten and were randomly drawn from the Salt FM (Ebonyi Broadcasting Corporation) and it was tape recorded off station, played back and analyzed by the researchers. The sample of the news include: Daybreak news at 6:30am, Global news at 1pm and Evening news at 6pm. The findings of the study discovered that the broadcasters committed largely the error of replacement, where certain English phonemes which do not occur in Nigerian languages were replaced by those that are available in their dialects or native languages. These replacement can lead to alteration in meaning and communication.

Oladimeji (2013) conducted his research on the segmental articulatory features of Nigerian English. He gathered his data from one hundred and fifty (150) Nigerian students. They were interviewed orally and also the participants were asked to read several prepared texts. Their different performances and competences were recorded and evaluated for analysis. The noticeable areas that were carefully investigated were the articulation of central vowels, stops or plosives, affricates, continuants and fricatives which were found to be signs of regional identity in Nigeria. The phonological markers of identity peculiar to educated Nigerians were central vowels (82%), stops or plosives

(66%), affricates (80%), continuants (24%) fricatives (72%) which are signs of regional identity.

Another research was conducted by Akpan et al (2012) on the influence of L1 in the broadcasting industry in Nigeria. The study showed that majority of the respondents were of the view that Nigerian newscasters were affected by L1 interference in the progress of their duties. This is because individuals who helped this opinion amounted to 69.9% of the total sample studied, which forms more than 1/2 of the sample studied held the opinion. It was still indicated that the degree to which Nigerian newscasters were affected by L1 interference in the way of their duties is little.

From the analysis of the study it was further discovered that majority of the respondents agreed that most Nigerian newscasters are not trained in the English phonological structures, therefore cannot articulate most words correctly. It was also showed that most Nigerian newscasters' L1 do not have certain English phonemes and have consonants clusters which hamper their articulation pattern. This means that, the lack of particular English phonemes in mother tongue of most newscasters is a key problem facing Nigerian newscasters. Another problem includes the consonants clusters in their languages in the course of their programmes today. It was similarly discovered that most Nigerian newscasters do not notice the stress forms in English. This means that, most Nigerian newscasters take the pitching in the stress forms of English sound structure for granted and indeed caused lots of challenges to the broadcast profession.

There are numerous elements that influence the articulation of second language learners. That is, the L1 interference, interference of the learner's psychological attitude, learner's age, learner's mother tongue, prior articulation instruction, as well as the inadequate linguistic knowledge of English phonology and phonetics (Iyere, 2013). He went further by saying that most researchers agree that the learner's L1 affects the articulation of the target language and is an important factor in accounting for foreign

accents. A lot of Nigerian students have difficulty with English sounds since they are likely to be influenced by similar sounds in their various languages. A certain sound which does not occur in the native language can cause some difficulty for the L2 learners to produce. Many students substitute those sounds with similar ones in their L1. These sounds include vowels and consonants. For instance, there are no vowels like /əu/, /æ/ and /ʌ/, or no such consonants as /θ/, /ð/ in Hausa. Then learners have difficulty in identifying these sounds, and subsequently trying to find near sound (equivalent) to replace those new sounds.

Ikani (2004) in his research on Igala speakers found that the most difficult consonant sounds for Igala learners of English as a second language are dental fricatives /θ/ and /ð/ which do not exist in Igala. The propensity is for learners to recognize them as /t/ and /d/ correspondingly, so that the sets such as *tin* and *thin, bat* and *bath, dart* and *that*, will be recognized without showing their differences.

Onike (2009) as cited in Patrick et al (2013) conducted a research on phonological difficulties of Yoruba speakers of English. The researcher classified linguistic transfer into two: proactive and retroactive interference. According to the researcher, proactive interference helps L1 learners to acquire second language especially those features that are similar with the features in his first language. While the second category of interference according to researcher's view, slow learning of second language due to the absence of sounds in L1. As such, it becomes difficult for someone to assimilate the features in the second language that are absent in the first language. His findings revealed that Yoruba speakers of English has difficulty in the articulation of English sounds such as /z/ and /ʧ/ as a result, they pronounce "ZOO" as "SOO" or "CHAMPION" as "SHAMPION". The research further revealed that Yoruba's has difficulty in articulation of consonant cluster of English. This is due to the

reason that such phonological terminology does not exist in Yoruba language. For example, screwdriver is pronounce as /sukurudireva/ and school as /sukul/.

Mother tongue simply refers to someone's native language or first language taught at home from immediate members of his/her family (UNESCO, 2003). Second language simply means any language someone learns to speak after learning the first language close to native speaker of that language (Al-Saidat, 2010). English is a very important medium of communication in a multilingual society like Nigeria. The English language attained a significance status in Nigeria to a level that it is viewed as one of the treasures from British to Nigeria (Eyisi, 2007). One of the factors that localizes or hinders learning of second language particularly pronunciation is mother tongue interference. The learning of a first or native language appeared easier or complete compared to second language learning which in most cases is characterized by number of phonological, morphological or synthetic transfer of linguistic elements from the first to second language (Sani, 2005). He went further to elaborate that L1 is present in L2 minds, their knowledge of second language is related in any way with his/her background of first language. Based on these speeches of second language learners' are characterized by intrusion of phonetic interference from his/her first language. This type of interference lead to errors especially if the transferred features or sounds are not present in the second language phonological inventory. This type of transfer is called interference (Cook, 1992). For another scholar there is no contemplation native language phonology and phonetics are powerful influence on the L2 learning (Odlin, 1989). This scholar share the same understanding with Avery and Ehrlich who are of the view that learners of second language transfer, their phonological features of first language to the L2. This usually lead to strange accent which is heard in their pronunciation of certain English words (Avery and Ehrlich, 1992).

2.5. Studies on the Perception and Production of English Sounds

Speech production is not the only area of investigation in L2 phonological research. L2 learners' perception of L2 speech sounds is another major area for the understanding of interphonology. It has been argued that speech perception bears an intimate relation with speech production, in such a way that learners' perception may affect the accuracy with which second language phonetic segments can be created (e.g., Schmid & Yeni-Komshian, 1999; Munro & Derwing, 1995). Some recent theories posit that speech production and perception procedures are closely related, with underlying devices (Hottari & Iverson, 2010). If speech production and perception procedures are closely related, it is possible that second language learners who are good at perceiving second language speech sounds are good at producing the sounds. It looks that there is a correlation between second language production and perception, but the linking is not vigorous enough to be certain that there are common fundamental mechanism for production and perception (Hottari & Iverson, 2010).

The accurate acquisition of a new sound of L2 actually means both accurate perception and production of the target sound. Flege (1995) predicts correspondence between production and perception of second language sounds. He observe it in the sense that second language learners produce sounds of the second language in the way they perceive them. Furthermore, better production of an L2 sound implies better perception of the same L2 sound by learners. Kluge et al (2007) and Ha (2001), for instance, found strong correspondence between perception and production of consonants of English by L2 learners.

The variations between the English and Hausa sounds is presumably the causative agent of difficulties which pave way to noticing foreign accent in Hausa pronunciation of English fricative sounds. This interference virtually hinders speeches and reveals the difficulties someone encounters in his/her production and perception.

Sounds system of language are classified into vowel and consonant sounds through which every word is tactically composed and uttered. Though, each language in the world has its own way of sounds production and perception that differs from one another. Hence, no language has identical phonological sounds but the concern here is limited to difficulties of perception and production of fricative sounds of English by Nigerian Hausa speakers. Yet, English L2 learners must produce and perceive it as comprehensive as native English speakers would, in order to be evidently understood. For that reason, Hausa speakers have to comprehend the perception and production differences when learning an L2 to avoid being misjudged.

Owolabi (2012) examined the perception and production difficulties of Yoruba ESL learners of English in the pronunciation of the English dental fricatives. The findings of the study revealed that these fricatives /θ/ and /ð/ pose problem to Yoruba ESL speakers. This is inseparable from the unavailability of such sounds in the Yoruba phonetic system.

2.6. The Production and Perception of English Sounds by ESL Speakers

In this part, studies focused on ESL learners as well as research and findings concerning the perception and production difficulties encountered by ESL learners from different language backgrounds are discussed.

One of the long-standing issues in L2 acquisition is the relationship between speech perception and production. Some current theoretical frameworks hypothesize that speech perception and production processes are closely related, with common underlying mechanisms. For instance, motor theory states that listeners perceive speech using a phonetic module that represents speech in terms of neuromotor commands to the articulators (i.e., intended articulatory gestures), and that humans produce acoustic signals by using the decoder to generate muscle contractions leading to intended vocal

tract shapes. Direct realist theory states that listeners perceive speech using a general perceptual system, which directly detects the actual articulatory gestures of the speaker's vocal tract. The theory also states that humans perceive speech as a part of learning to use vocal tracts for communicative purposes.

If speech perception and production processes are closely related, it is possible that L2 learners who are good at perceiving L2 speech sounds are likely to be good at producing the sounds. Some previous studies, indeed, provided corroborative evidence that this is the case although the correlations tend to be only moderate. L2 phonetic training studies demonstrated that such training is effective for enhancing both perception and production abilities. However, the amounts of improvement in perception and production due to training are uncorrected. Therefore, it appears that there is a relationship between L2 perception and production, but the connection is not robust enough to be sure that there are common underlying mechanisms for perception and production.

The interrelationship between perception and production has been discussed in the second/foreign (L2) language phonetics and phonology literature and some studies show that perception plays a very important role in the production of second language sounds. Flege posits that L2 sounds may be perceived in terms of those of the L1 by the learner, making this perception different from that of a native speaker. For example, sounds that are separate phonemes in an L2 might be merely allophones of the same phoneme in the native language (L1). Flege claims that this may influence the production of L2 sounds by a native speaker of this L1 because of the identical mental representation that the speaker has for the two sounds.

Flege's Speech Learning Model (SLM) posits that the perceived relationship between L1 and L2 categories plays an important role in accurately perceiving or producing L2 sounds. According to Flege, the accuracy with which sounds are

perceived suggest how accurate they will be produced, although sometimes production does not reach the same level of accuracy of perception.

Baker and Trofimovich (2001) state that "understanding such a relationship is important for both theoretical and pedagogical reasons" (p. 273). For theoretical reasons, understanding the relationship may lead to explanations of second language acquisition. For pedagogical reasons, it may help to determine what kinds of second-language learning activities may be more effective, and contribute to minimize foreign accents.

The studies on the relationship between perception and production have taken three directions, as stated by Koerich (2002). First, studies indicate that perception outperforms production (e.g., Archibald, 1993; Broselow & Park, 1995; Flege, 1984; Flege & Hammond, 1982; Flege & Hillebrand, 1984, all cited in Koerich, 2002, p. 102). Second, studies indicate a correlation between perception and production (e.g., Flege & Schmidt, 1995; Flege, 1993 both cited in Koerich, 2002; Best, 1995; Flege, 1999; Flege et al., 1999). Third, studies indicate that production may outperform perception (e.g., Flege, 1987; Flege et al., 1997; Gass, 1984; Sheldon, 1985; Sheldon & Strange, 1982, all cited in Koerich, 2002).

The SLM (Flege, 1995) claims that "without accurate perceptual 'targets' to guide the sensorimotor learning of L2 sounds, production of the L2 sounds will be inaccurate" (p. 238). However, the model does not state that all target language errors have a perceptual origin, but that many do.

Flege (1999) discusses the accuracy with which L2 sounds are either perceived or produced, based on the model. He says that "the accuracy with which L2 segments are perceived limits how accurately they will typically be produced, although not all aspects of perceptual learning may be incorporated in production" (Flege, 1999, p. 1).

This means that production and perception "may not be brought into perfect alignment, as in L1 speech acquisition" (Flege, 1999, p. 1).

A study carried out by Flege, Mackay & Meador (1999) investigated the production and perception of English vowels by highly experienced Italian EFL learners. Results showed that the later the participants started their contact with English, the lees accurately they produced and perceived English vowels in the experiment. The results also showed that there was a correlation between the measures of English vowel production and perception of the Italian speakers. It was observed that the accuracy with which L2 vowels were produced was limited by how accurately they were perceived. These findings are consistent with the SLM.

A research conducted by Koerich (2002) is also relevant to the present study. She investigated perception and its relationship to production of English word-final consonants by beginning Brazilian learners. She based the perception and production study mainly on Flege's SLM and found a negative correlation between the production of epenthetic vowels and the perception of the distinction between words ending in a final consonant and words ending in a consonant plus the vowel /i/. Koerich juxtaposes the pictures of production and perception resulting from her study and concludes that "an association appears between the two images, indicating that degrees of variation in the perception and production performance of the group investigated can be noted, whereas production becomes more accurate, perception also tends to improve, or the other way round" (p. 172).

The studies and findings reviewed are relevant to the present study due to the fact that they discuss the relationship between production and perception, which is one of the objectives of the present study.

Syed (2013) conducted a study on the acquisition of dental fricatives by Pakistani learners. The result of the perception work shows that the learners perceived

English dental fricatives as labial fricatives /f v/ or coronal fricatives. They perceived dental fricatives as labio-dental fricatives in more trials than as coronal fricatives. This shows that most of the learners perceived the stimuli on the basis of acoustic cues.

Chan (2011) examined the perception of English speech sounds by Cantonese ESL speakers in Hong Kong. Forty (40) university English students participated in the study. The experiment comprised of two L2 minimal pair identification tasks and one categorical discrimination tasks, which targeted at discriminating the participants' perception of different English speech sounds. The findings of the research indicate that particular English speech sound posed more perception difficulties than others, but perception difficulties do not essentially correspond to recognized production problems. It is claimed that learners' perception of word pronunciation could be a causative factor for their perception difficulties.

Research in the area of speech perception has either focused on the interaction between production and perception or on the perception alone. Flege and Mackay (2004) investigated the perception of vowels of English by Italian native speakers. Based on the study they concluded that learning a second language in childhood did not guarantee a native-like perception of second language vowels. Pater (2003) studied the perceptual acquisition of Thai phonology by English speakers. He found that learners' perception of aspiration outperformed their perception of voice. The place of articulation was also found to have interacted with perception of laryngeal distinctions. Ingram and Park (1997) for example, investigated the perception of nonnative vowels by Korean and Japanese English learners. They found that the participants confused the /e/ and /æ/ vowels that are not contrastive in their languages but showed no difficulty perceiving other vowels contrastive in their languages

Studies which attempted to explore the interaction between perception and production included Chan (2001) who investigated the perception and production of

English word-initial consonants by Cantonese speakers. She found a positive correlation between the two. Learners who consistently mispronounced the target consonants had significantly poorer perceptual performance than those who consistently produced the same sounds correctly. Proctor (2004) investigated the perception and production of Australian English vowels by Japanese and Vietnamese English as a second learners and found evidence for the transfer of skills in the perception of duration from L1 to L2. Bradlow, Pisoni, Akahane-Yamada, and Tohkura (1997) claimed that perceptual knowledge gained in perceptual training could be transferred to learners' production domain. Also that there might be a common mental representation determining both speech production and speech perception. The importance of speech perception in L2 phonology and the effects of perception on production are evident.

Binturki (2008) conducted a research on the phonological problems of Arab ESL speakers. His study revealed that Arabic ESL speakers experience difficulties in the articulation of these consonants /r/, /v/ and /p/. The study discovered that these sounds are more problematic to Arab speakers when they occur at words final position than in the word initial position. In another similar research conducted by Altaha (1995) on Saudi Arabians hindrance in the articulation of English sounds. The participants of this study began learning English as a second language and never move out of their country to learn English somewhere. He obtained his data through voice recording. When he analyzed the data, he discovered that his participants have problem in productions of these sounds /v/, /tʃ/ and /p/ as in *van* and *fan* produced /f/ instead of /v/, *chair* and *share* produced /ʃ/ instead of /tʃ/, also *pat* and *bat* produced /b/ instead of /p/.

Wester et al (2007) examined the nature of the substitution used by Dutch learners of English as a L2 on the dental fricatives /θ/ and /ð/. The results indicate that Dutch leaners do indeed substitute the dental fricatives of English on a large scale. The /θ/ and /ð/ are realized as alveolar fricatives /s/ and /z/. The occurrence of these

realizations are more often than other possibilities only in syllable final position. The obstruent /t/ and /d/ most commonly exist at syllable-initial. The current data reveal that phonetics plays a major role in the selection of the phonemes used to substitute the dental fricatives rather than phonology.

Hanulikova & Weber (2010) conducted their study on problems in producing English interdental fricatives /θ/ by German, English and Dutch speakers. The study revealed that a significant difference between Dutch and German speakers were found within the substituted instances. Dutch speakers predominantly replaced [θ] with [t] (77% compared to 16% for German speakers), whereas German speakers largely replaced the English [θ] with [s] (71%, compared to 15% for Dutch speakers). For both groups, the perceptually similar [f] followed least frequency (8% for Dutch speakers and 13% for German speakers). It is value nothing that, total, replacements did not seem to be word-dependent, and also many participants formed more than one substitute type. For English speakers they found 12% of [f]-substitution, which were predominantly focused by three speakers. While without these speakers, the number of [f]-instances fell to 5% and the number of [θ]-instances rose to 95%.

Kanokpermpoon (2007) investigated the areas of difficulties while Thai students attempt to articulate English consonantal sounds. The study revealed that English sounds which do not exist in the Thai phonology tend to cause great trouble for Thai students to utter. Those sounds include /θ/, /ð/, /g/, /v/, /z/, /tʃ/, /ʃ/, /ʤ/ and /ʒ/. Sounds which occur in Thai but can exist in different environments, that is, syllable position, are also disposed to be different to articulate. For instances are /f/ and /s/.

Baros (2003) as cited in Al-Saidat (2010) conducted a research on Arab ESL speakers who hail from diverse Arabian countries and through different linguistic experiences. The findings of this research indicate that eight English consonantal sounds appear problematic to these research samples. They are /ð/, /v/, /d/, /p/, /ʤ/, /θ/,

/r/, /ŋ/ and /l/ which are difficult to Arab speakers of English. The research also revealed that interference of native language (Arabic) is the major factor of pronunciation problem. This distinguish one Arab speaker of English with another depending on his/her background and the variety of Arabic he/she speaks.

Gonet and Pietron (2006) conducted their study on the speech of Polish learners of English on interdental fricatives of English. The recording material used in the current study consisted 80 phrases and words where (th) existed in different contextual positions. The objects were randomized and offered to 14 intermediate English students. After a short period of time used by the participants to get familiar with the words, they were requested to read them in portions. A SONY MZ-R700PC minidisk connected with a stereo SONY ECM-MS907 microphone were recorded the utterances. The results of the current experimental study of the substitutions of the interdental fricatives of English, reveal that the identity of the element used by Polish students of English to substitute it depend on two factors: the voicing of the target sound, and the position in which it exist in the utterance. The voiced interdental fricative /ð/ is most often substituted by /v/ before consonants, and /d/ before vowels. Wheras the voiceless interdental fricative /θ/ can be substituted either by /f/ in contexts easy to articulate, and by /f/ or /t/ in consonantal clusters. In word-final positions, /ð/ is often devoiced to /θ/, and both are realized as /f/.

Ammar and Alhumaid (2009) performed a study on Saudi ESL learners on pronunciation errors who had never move to any English speaking country. The study focused on phonetic interference of Najdi Arabic in the acquisition of English by Saudi female undergraduates. In all possible word positions (initial, medial, and final), they examined the sounds /v/, /p/, /l/, /θ/, /ŋ, /ʒ/, /ð/, /ʤ/, /ʧ/, and /ɹ/. The sample of the study were thirteen Najdi Arabic ESL learners studying English in a Saudi Arabian University.

The results revealed that participants faced L1 interference with all the investigated sounds. The total distortion percentages for words in the list were 69.6% for /ʒ/, 44.5% for /ɹ/, 93.5% for /ŋ/, 19.6% for /tʃ/, 11.8% for /v/, 36.6% for /ð/, 21.5% for /dʒ/, 26.7% for/l/, 7% for /θ/ and 50.8% for /p/. The results also indicated that there were some differences in the distortion percentages depending on the position of a sound within a word, although the researchers did not consider it to be significant.

The findings of Ammar and Alhumaid (2009) supported the findings of several studies in the literature (Binturki, 2008; Altaha, 1995). Furthermore, the results partly supported Binturki's (2008) analysis, meanwhile both studies found sounds were difficult to articulate in connected speech more than in isolation. On the other hand, Ammar & Alhumaid's (2009) results proposed that the position of a sound within a word was not significant. This suggestion contradicted Binturki's (2008) results, where he stated that the sounds /ɹ/, /v/, and /p/ were difficult to articulate correctly in word-final position than in word-initial.

Nuhiu (2013) investigated the problems of Albanian speakers of English in articulating particular speech sound. The study revealed that there is a particular sound category, which on the level of words and syllables, in numerous ways provokes pronunciation problems. It make native Albanian learners encounter a variety of pronunciation difficulties, in the assimilation of specific sounds.

Ahmad (2011) investigated the problems Saudi ESL learners encountered when articulating particular English consonant sounds. The eight participants in the current study were randomly selected from different regions of the country. The participants had never move to any English speaking country. The students were asked to read a word list while being recorded. The findings of the study show that the students had problems in articulating particular English consonant sounds, for example: /tʃ/, /ʒ/, /v/, /p/, /ŋ/, and /d/. The study also revealed that Saudi ESL learners faced minimal

difficulties in articulating /t/, /d/. In the case of difficulties, the students substituted the investigated sounds with similar sounds from their phonemic inventory (Arabic). In some sounds, word position played a significant role, but in others it did not. The results concerning the position of a sound in a word both contradicted and supported previous studies investigating the same issue (Binturki, 2008; Ammar & Alhumaid, 2009). In the present study sound position within a word was examined because it was revealed in the literature to be a contentious issue.

Rehman, Khan, and Bukhari (2012) conducted a research on problematic consonants for Pashto ESL learners. The sample of the study were fifteen native Pashto college students and they randomly chosen. The researchers used sentences and word lists containing the investigated sounds /θ/, /ʒ/, /v/, /ð/, and /f/ in word initial position, medial position, and final positions. The participants voice were recorded with PRAAT software and later analyzed using spectrograms.

The data analysis revealed that Pashto ESL learners replaced all the investigated phonemes with similar sounds from Pashto's sound system. The participants replaced /w/ for /v/, /p/ for /f/, /t̪/ for /θ/, /ʤ/ for /ʒ/, and /d̪/ for /ð/. The position of examined sounds within words did not significantly affect the results, though word-final position was slightly more problematic than the other positions. The study concluded that Pashto speakers of English substituted sounds that did not occur in Pashto's sound system with similar sounds in the same place of articulation. Especially those that did occur in Pashto and without regard to the manner of articulation.

A study conducted by Tiono and Yostanto (2008) in order to investigate the phonological errors that Indonesian ESL learners produced. The errors occur when pronouncing new phonemes that do not occur in the phonemic inventory. The study focused on the following phonemes /θ/, /ʒ/, /v/, /ð/, /tʃ/, and /ʤ/ in three word positions (initial, medial, and final). The sample of the study were twenty-five department of

English students who studied in a university. And who had taken English speaking class for six semesters. The participants were recorded reading a word lists, and also their voices were transcribed using IPA.

The findings and analysis of the research discovered that first, the participants made phonological errors in all of the articulation of the six consonantal sounds of English being investigated in the study. Moreover, the phonological errors could be discovered in all 3 positions of occurrences, with the exception of /tʃ/ in the final position. However, it would also be observed that though they made those phonological errors, they still able to articulate some of the words correctly. Secondly, the participants made thirty-four forms of deviations in all. The thirty-four forms of deviations included the substitutions of /ð/ with /t/, /d/, /th/ and /θ/, the substitution of /v/ with /f/, the substitution of /θ/ with /s/, /d/, /t/, /ð/ and /th/ and the deletion of /θ/, the replacement of /tʃ/ with /s/, /kh/, /c/, /ʃ/ and /h/, the substitution of /dʒ/ with /d/, /g/, /tʃ/, /j/, /ʃ/, /f/, /s/ and /k/, and the substitution of /ʒ/ with /z/, /d/, /j/, /s/, /g/, /tʃ/, /dʒ/, /k/ and /ʃ/ and the deletion of /ʒ/. It could also be figured out that one specific English sound /ʒ/, formed many problems for the participants if compared to the observed five English consonantal sounds.

Learning of spoken English are confronted at the onset with five kinds of problems in the area of pronunciation. These are:

I. “The learners must recognize rapidly and with certainty that the various speeches in the language, moreover, should also remember the acoustic qualities of these sounds.
II. The learner must study how to practice this sound properly in connected speech.
III. He/she must learn how to make foreign sounds with his/her own organs of speech.

IV. The learner must to learn the proper usage of sounds prosodic or attributes (pitch, voice and length stress).

V. The learner must to learn to catenae each sound that joined each of the sequence on to the next and produce complete speech rapidly" (Jones, 1969).

Any kind of sound in the second language that has no similarity in the first language can possibly cause difficulties to learners. For instance, English dental fricatives /θ/ and /ð / are known to be problematic for beginners of many languages. They are as difficult to native speakers since they are the last sounds that children acquire and use to be replaced by /f/, /v/ or /t/, /d/ or /s/, /z/ in various local accents (Wells, 1992).

Al-Shuaibi (2009) as cited in Ahmad (2011) centres on the phonology of phonotactics. He discovers that learners have problems in articulating initial consonant clusters of English which have three members and final cluster of consonants of three and four members. He revealed various processes involved in the articulation of these clusters, specifically: deletion, reduction and substitution.

The question of the influence of mother tongue (L1) on target language (L2) can never be overlooked by researchers in the domain of bilingual speakers. This is because of the acknowledged fact that L1 role in L2 data signifies the presence of L1 into L2 (Whong-Barr, 2006).

Most of the difficulties encountered were with the pronunciation, words and rules of second language are as a result of interference of native language experience. The formal features of L1 are applied in using L2 which leads to errors in the use of L2 since the structures of first and second language are different (Hugo, 1982).

Hansen (2004) conducted a study on the Vietnamese speakers of English. The study shows that Vietnamese experience difficulty in the production of /s/ and /f/ in coda position and it also revealed that they were less accurate on the production of /v/

and /l/ and then /ʃ /. Furthermore, Tam (2005) discovered that some of the sounds, for instance /ʒ/, /tʃ/ and /dʒ/ are really difficult for Vietnamese learners to produce especially when these sounds exist at the end of words. Nevertheless, from the data, most of the samples in which informants could not articulate the words properly, comprise of two or three consonants.

Chan (2006) conducted a research on Cantonese English as a second language learners' articulation of English final consonants. The samples of the study were twelve learners of English at the advanced and intermediate levels participated in the research. The research comprised of 4 different tasks: the description of about one hundred pictures, the reading of about 150 words in word lists, a conversational interview and the reading of about 250-350 words each in three passages. Words containing all the permissible English final consonants in different heading, the learners' interphonology were examining by vowel environments. The performance of the participants in every task was recorded and later transcribed individually by 2 raters. The findings of the research indicated that the participants had greatest difficulties with the voicing contrasts of final obstruent. Additional difficulties comprised the incorrect pronunciation of some sonorant and fricatives consonants, particularly lateral /l/ and non-release of final plosives.

Individuals tend to interchange the structure and meaning of their first language vocabulary in learning the L2. This is as a result of this interchange or transfer errors occur in their pronunciation which likely change or tamper with the intended meaning of the speaker (Kattemann & Wieden, 1993).

Al-Saidat (2010) focuses his study on English phonotactics to determine the kinds of pronunciation difficulties Arab learners face when acquiring English as a L2. The researcher investigated the forms of declusterization procedures are located in their interlanguage as well as what are the bases of these processes. The findings of the

research indicated that Arab ESL learners involuntarily insert an anaptyctic vowel at the beginning and the end of specific English syllables. The findings likewise revealed that the main cause for declusterization processes is the L1 interference.

Wahba (1998) in his research, examined the difficulties encountered by Egyptian ESL learners. The study demonstrate that the phonological blunders committed by the students are connected to intonation and stress. The researcher recommended that these mistakes are interlingual and recognized due to the phonological variances between the sound systems of Arabic and English.

2.7. Conclusion

All previous studies done on other languages other than Hausa focused on error analysis. There has been no study conducted on the perception and production of Hausa speakers. The current research made a contribution to the field of phonetics and phonology by providing evidence that ESL learners can achieve more intelligible and accurate pronunciation of target language sounds through explicit instruction and training.

From the above disposition one can understand that perception and production is not only central to Hausa speakers of English. It has become an established phenomena in the linguistic study that individual use to substitute sounds in the target language. They are usually substituted with those that are similar to those sounds in their mother tongue or first language. As a result, the interference make the speech of those people unintelligible.

CHAPTER 3

METHODOLOGY

3.0. Introduction

The chapter describes the methodology for the study. And it was conducted to investigate the perception and production of English fricatives /v/, /θ/ and /ð/ in initial and final positions by Nigerian Hausa speakers of English. It also includes the participants, instruments, data collection, rating process, data analysis, scoring, and pilot study.

3.1. Participants

This study was conducted at the Faculty of Languages and Linguistics, University of Malaya. The subjects in this study consist of 5 (3 males and 2 females) Hausa ESL masters students. Subjects ranged in age between 25-40 years old with an average age of 31 years. All of them were raised and lived in Nigeria, specifically in the northern part of the country where Hausa is spoken by the majority of the people. All the subjects were living and studying in Malaysia at the time of this study. All of them began learning English as a second language at the age of 9-12 years.

Table 3.1: Background of the Speakers:

Speaker	Gender	Age	Native Language	Educational background	Course
A	Male	37	Hausa	B. A	Library & Information Science
B	Male	27	Hausa	B. LIS	Library & Information Science
C	Male	30	Hausa	BL	Law
D	Female	36	Hausa	B. ED	Islamic Studies
E	Female	28	Hausa	B. SC	Computer Science

B. LIS: Bachelor of Library and Information Science, B. A: Bachelor of Arts, B. SC: Bachelor of Science, BL: Barrister in Law, B. ED: Bachelor of Education.

The language of instruction of these subjects was Hausa during their junior primary education from primary 1-3. This arose as a result of the Nigerian policy of education 1979 which suggest that the native language (mother tongue) as a language of instruction in junior primary school. And this applies to other part of Nigeria where their indigenous languages are also used for teaching junior primary school pupils. Moreover, the subjects of my study are graduates from different Nigerian Universities, who were currently undergoing postgraduate courses in the University of Malaya. The data for this study was recorded from individual participants at University of Malaya. Only three out of the subjects had been in Malaysia for less than a year at the time of this study, which is speakers A, B and C. While speaker D had spent one year and speaker E spent one and half years in Malaysia.

3.2. Instruments

The instrument of the current study consists of two tests (1) the perception test (2) the production test.

The perception test has three tasks namely: identification task, an AX discrimination task, and a 3 alternative forced choice (3AFC) discrimination task. All the tests were employed to examine the following sounds /v/, /θ/ and /ð/ in initial and final word positions. The reason for chosen these sounds is because they are difficult for Hausa ESL speakers.

(1) Identification task: in this test, the subjects were asked to identify and write in English which words they heard. For example, /θ/ *thread* and *death*, /ð/ *these* and *booth*, /v/ *vest* and *move* (see Appendix B).

(2) An AX discrimination task: The purpose of this task was to determine whether the subjects could discriminate between these English sounds: fricative /v/ with plosive /b/, dental fricative /θ/ with plosive /t/ and dental fricative /ð/ with plosive /d/ or if they confused them. For example, /v/ *vest* and *best*, *vest* and *vest*, *prove* and *prove*, *prove* and *probe*, *three* and *three*, *three* and *tree*, *both* and *both*, *both* and *bought*, *that* and *that*, *that* and *dart*, *with* and *with*, *with* and *weed* (refer to Appendix D).

(3) 3AFC discrimination task: The aim of this task is to test whether the subjects could differentiate English /v/ from /b/, /θ/ from /t/ or /s/ and /ð/ from /d/ or /z/. For example, *van – ban – fan*, *seethe – seed – seize*, *thin – tin – sin* (See Appendix F).

In the production test, there were thirty (30) words which contained /v/, /θ/, and /ð/. Each sound has five (5) words in the target consonants in initial and final positions. The list carried the words with the target sounds in isolation and it also monosyllabic words (refer to Appendix H).

3.3. Data Collection

This work focuses on the perception and production of the investigated sounds. Participants were examined independently after agreeing and signing the consent form in order to participate in the study. All the participants answered a questionnaire to elicit their demographic information that included sex, age, educational background, country of origin and how long they had been living in Malaysia, for the purpose of interpretation.

3.3.1. Perception Test

The perception test has three tasks:

3.3.1.1. Identification Task

In this task, the subjects were asked to identify and write in English in the relevant columns of a given answer sheet, which word they heard. The selected words for this analysis were produced by a male non-native speaker who is an English lecturer at Umar Musa Yar'adua University Katsina Nigeria, who is doing his PhD at the department of English Literature, Faculty of Arts and Social Sciences, University of Malaya. He is 47 years and he has been teaching English for more than 15 years. Thirty (30) English words spoken in isolation were presented, and the target sounds appeared in both initial and final positions. The subjects were allowed to listen to any word more than once and asked to write their answers when they identified the word. In most times, sometimes they asked for repetition. A SONY ICD-PX333 minidisk recorder was used for playing the words. Headphones were used to listen to the recordings (see Appendix B).

3.3.1.2. An AX discrimination Task

In this task, there were 45 sequences of words. The instructions given to the subjects were written on the answer sheet in English. Two pair of words were played, and the subjects were asked to determine by ticking in the relevant column of the answer sheet if the consonants in the two sets of sounds are the same or different. For example, you are going to hear sets of two (2) sounds. Tick 1 or 2, mark all the sequences. *Tick one (1) if the first sound is different from the second sound; tick two (2) if the sounds are the same.* For instance, *bath* and *bath*, *vest* and *best*, *seed* and *seethe*, *three* and *three*, *tree* and *three*, *they* and *they*, *day* and *they*, *voice* and *voice*, *boys* and *voice*, *with* and *with*, *weed* and *with* etc. The sounds were also read by the same non-native speaker as in task 1 (refer to Appendix D).

3.3.1.3. A 3AFC discrimination Task

In the 3AFC task, they listened to 10 sets of sounds including those listed below:

van	ban	fan
bath	bat	bus
breathe	breed	breeze

The subjects were asked to choose by ticking one of the following on the given answer sheet after hearing each sets of the sounds. For example, you are going to hear sets of three (3) sounds. Tick 1, 2 or 3, mark all the sequences. *Tick 1 if the first sound is the same as the second sound; tick 2 if the first sound is the same as the third sound; and tick 3 if the first sound is different from the second and third sounds*. See Appendix F for more details. All the words were produced by the same non-native speaker. Each subject used headphone to hear the audio (see Appendix F).

3.3.2. Production Test

The second part of the instrument is a production test. The subjects read 30 words and their speech was audio recorded using a SONY ICD-PX333 minidisk recorder. Each participant was asked to read the words loudly while being recorded. Five words were carefully chosen for each consonant sound /v/, /θ/ and /ð/ in both the 2 word positions. Participants were requested first to read the words silently for four minutes to get familiar with the word list. When they were ready they informed the researcher to start recording. The recording took place in the studio at the Faculty of Languages and Linguistics University of Malaya, the place was suitable for recording because it was really quiet (refer to Appendix H).

3.4. Rating Process

After the data collection was completed, the recorded speech samples collected from the participants were rated by three raters: The male non-native speakers from Nigeria who were undergoing their PhD in University of Malaya, International Islamic University and University Putra Malaysia. One is an English lecturer at Umar Musa Yar'adua University Katsina Nigeria, who is doing his PhD at the department of English Literature, Faculty of Arts and Social Sciences, University of Malaya. He is 47 years and he has been teaching English for more than 15 years. The second rater is doing his PhD in English Language Studies, in the Faculty of Islamic Revealed Knowledge and Human Sciences, International Islamic University. He is an English lecturer at Bayero University Kano Nigeria. He has been teaching English for almost eight years. He is 38 years old. The other rater is also an English lecturer at Bauchi State University Gadau Nigeria, currently studying at the Faculty of Modern Languages and Communication University Putra Malaysia. He has been teaching English for more than 10 years and he is 40 years old.

During the rating process, a 5-point Likert type scale from 5-1 was employed. 5 native-like, 4 near native-like, 3 different from natives but understandable, 2 hardly understandable, 1 unintelligible (Syed, 2013). Porte (2002) recommended the use of Likert scale in assessment of this nature. A printed copy of the sample chart was provided to the raters along with instructions.

Each rater has, first, individually rated each participant's pronunciation of words in isolation. During the rating process, the raters also took notes of the sounds that were problematic for the subjects. Once the rating process was completed, they came together to compare the ratings they assigned for the pronunciations and discuss the ratings that were different. In the process of discussing the ratings, the evaluation of one of the raters (who disagreed with other raters maximally) was rejected as there is big gap

between him and the other raters. The average of the scores of the two raters was calculated for further analysis.

3.5. Data Analysis and Scoring

The errors were analyzed for their types to check for any patterns that participants tended to make. Responses from each answer sheet were manually entered into a Microsoft Excel spreadsheet, then verified for accuracy. Calculations in the spreadsheet compared the responses to a key to evaluate them, then placed a 2 where an incorrect response was recorded. Correct responses were entered as 1. Totals were calculated for correct, incorrect per test, per word and for total error on all tests. From these totals, percentage correct was figured per test.

3.6. Pilot Study

A pilot study was carried out on the production and perception of 2 Hausa masters students. The participants selected for the pilot study were: One from department of Artificial Intelligence and the other one from Computer System and Technology Department, Faculty of Computer Science and Information Technology, University of Malaya. The speeches of these 2 were recorded, and they also listened to words in order to determine the difficulties Hausa speakers faced in the production and perception of English fricative sounds. This was done to ensure that the instruments used in the real study were valid and reliable. A pilot study conducted before the main study assisted in detecting problem areas, confusion and ambiguity that could be associated with the study.

The findings of the pilot revealed that one of the respondent performed better on the perception and production of these three sounds /v/, /θ/ and /ð/. On the other hand,

the other respondent was poorer on the perception and production of the three investigated sounds.

CHAPTER 4

FINDINGS AND DISCUSSIONS

4.0. Introduction

This chapter reports and discusses the results of the production and perception tests. The perception test consist of three tasks: - identification test, AX discrimination test, and a 3 alternative forced choice (3AFC) discrimination test.

4.1. Perception Test

In the perception test, three tasks were administered on the respondents. The three tasks were (a) Identification test (b) AX discrimination test and (c) 3 alternative forced choice discrimination test.

4.1.1. Identification Test

As described in Chapter 3 above, in the identification test, 30 English words spoken in isolation were presented. A response sheet was given to the respondents, who listened to the recording and identified the word they had heard by writing on the answer sheet. The thirty words contained /v/, /θ/ and /ð/. Each sound has five (5) words in initial and final positions. The list carried the words with the target sounds and it also monosyllabic words (Refer to Appendix B).

4.1.1.1. Identification Test of /v/ in Initial and Final Positions

This target sound were featured in 10 words, five in initial and the other five in final position. In this test, the respondents were asked to identify and write in English which

words they heard. For example, in the initial position, the words were *voice, van, view, vest* and *vocal*, while final position *prove, move, live, cave* and *shave*.

Table 4.1 shows that three (3) of the respondents (B, D and E) were able to identified all 5 words which constitute 100% of the words correctly. While the other 2 respondents (A and C) were able to identified 4 words (each) out of 5 which constitute 80% of the words accurately. The later identified 1 (each) that is (*vest*) which constitutes 20% of the words wrongly. The mean score for the correct answers is 4.6 while for incorrect is 0.4.

Table 4.1 reveals that four (4) respondents (B, C, D and E) were able to identify all 5 words which constitute 100% of the words accurately. On the other hand, one respondent (A) identified 4 words which constitute 80% of the words correctly and inaccurately identified (*prove*) which constitute 20% of the words. The mean score for correct answers is 4.8 and for incorrect ones is 0.2.

Table 4.1: Results of Identification Test of /v/ in Initial and Final Positions

Respondent	Initial Position		Final Position	
	Correct	Incorrect	Correct	Incorrect
A	4	1	4	1
B	5	0	5	0
C	4	1	5	0
D	5	0	5	0
E	5	0	5	0
Total	23	2	24	1

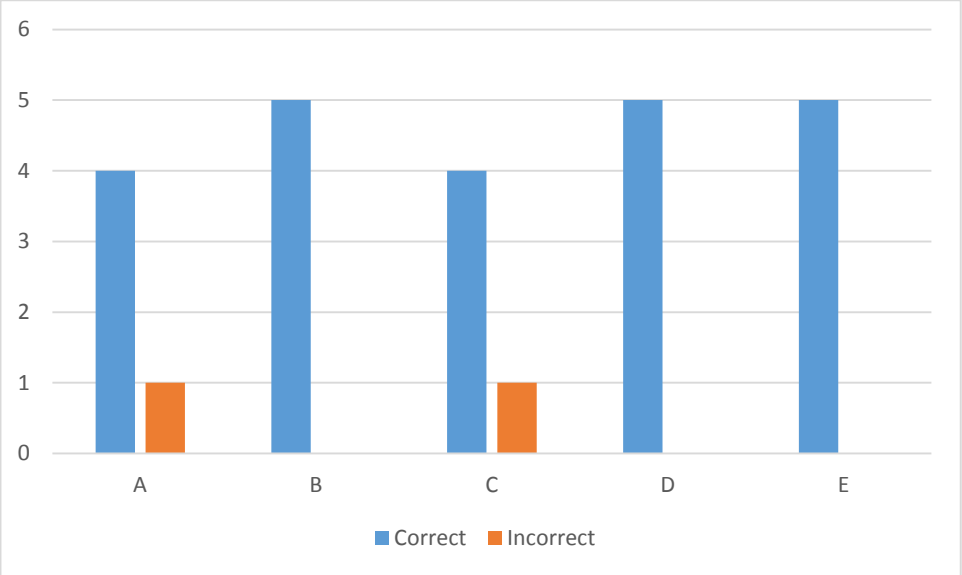

Figure 4.1: Results of Identification Test of /v/ in Initial Position

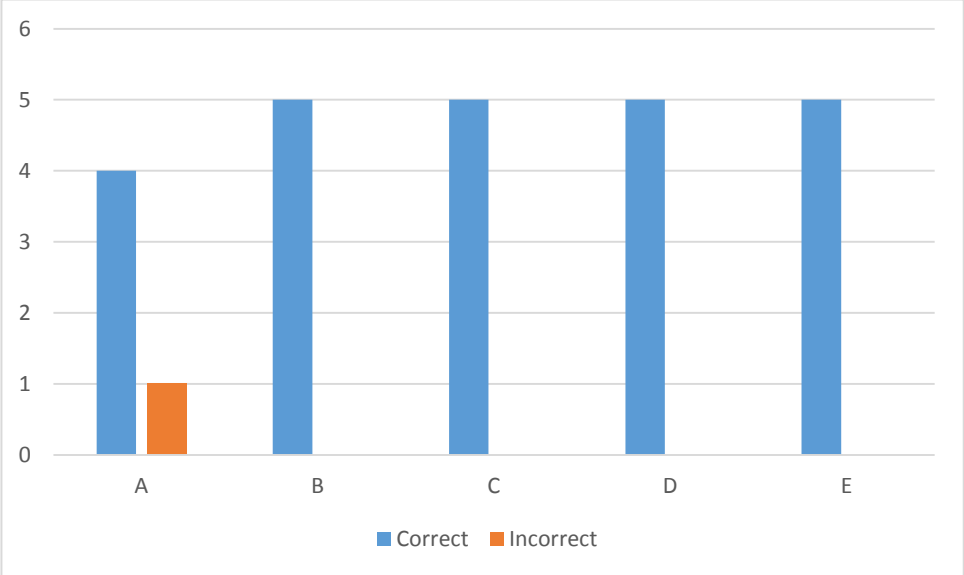

Figure 4.2: Result of Identification Test of /v/ in Final Position

4.1.1.2. Identification Test of /θ/ in Initial and Final Positions

This sound features in 10 words, five in the initial and five in the final position.

Table 4.2 indicates that 2 of the respondents (B and E) were able to identify all the 5 words which constitute 100% of the words excellently. While respondents C and D

identified four (4) words out of 5 which constitute 80% of the total words accurately and incorrectly identified one word (*threat*) which constitutes 20% of the words. Respondent A identified only two (2) words out of 5 which constitute 40% of the words perfectly. Wrongly identified 3 words (*thread*, *threat* and *three*) which constitute 60% of the words. The mean score for correct answers is 4 and for incorrect is 1.

Table 4.2 shows that four (4) of the respondents (B, C, D and E) were able to perceive 100% of the words correctly. Respondent A was able to perceive 2 out of 5 words correctly which constitute 40% of the words and misperceived 3 (*both*, *oath* and *birth*) out of the 5 words which constitute 60% of the words. The mean score for correct answers is 4.4 and for incorrect is 0.6.

Table 4.2: Results of Identification Test of /θ/ in Initial and Final Positions

Respondent	Initial Position		Final Position	
	Correct	Incorrect	Correct	Incorrect
A	2	3	2	3
B	5	0	5	0
C	4	1	5	0
D	4	1	5	0
E	5	0	5	0
Total	20	5	22	3

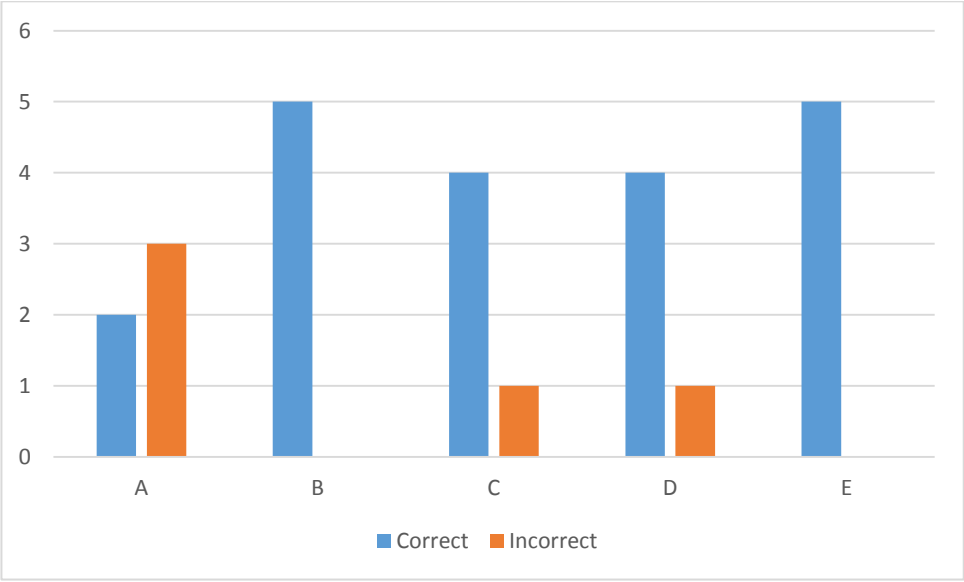

Figure 4.3: Results of Identification Test of /θ/ in Initial Position

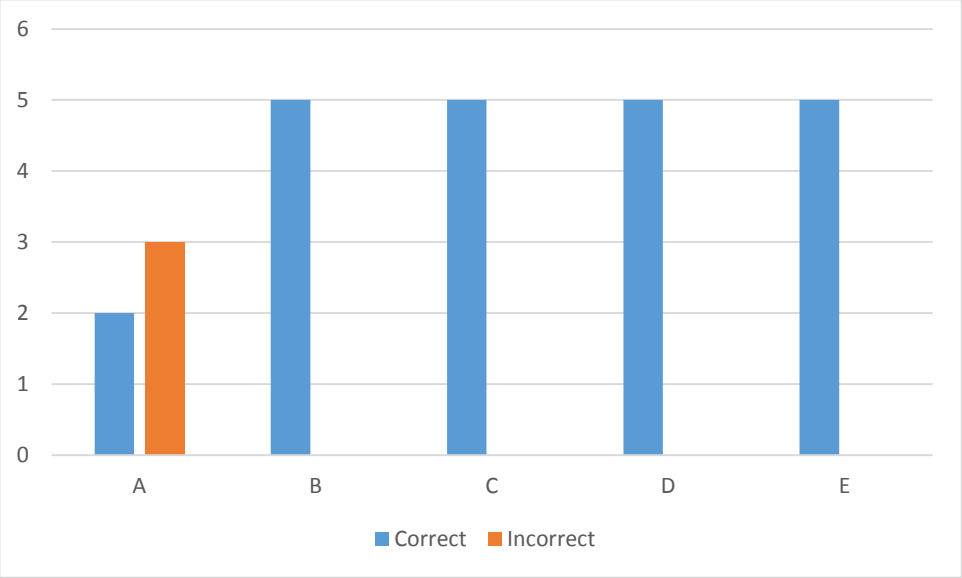

Figure 4.4: Result of Identification Test of /θ/ in Final Position

4.1.1.3. Identification Test of /ð/ in Initial and Final Positions

A total of 10 words containing /ð/ were employed on this sound 5 in the initial and 5 in final position.

Table 4.3 and Figure 4.5 show that all the 5 respondents (A, B, C, D and E) were able to identify 100% of the words correctly. There has been no error with regard to the perception of the sound /ð/ in initial position. The mean score stands at 5 for correct as no incorrect entry is found.

Table 4.3 indicates that one respondent (B) was able to identify all the 5 words correctly. While 4 of the respondents (A, C, D and E) were able to identify 4 words accurately and incorrectly identified (*seethe*) which constitute 20% of the words. The mean for correct answers is 4.2 and for incorrect is 0.8.

Table 4.3: Results of Identification Test of /ð/ in Initial and Final Positions

Respondent	Initial Position		Final Position	
	Correct	Incorrect	Correct	Incorrect
A	5	0	4	1
B	5	0	5	0
C	5	0	4	1
D	5	0	4	1
E	5	0	4	1
Total	25	0	21	4

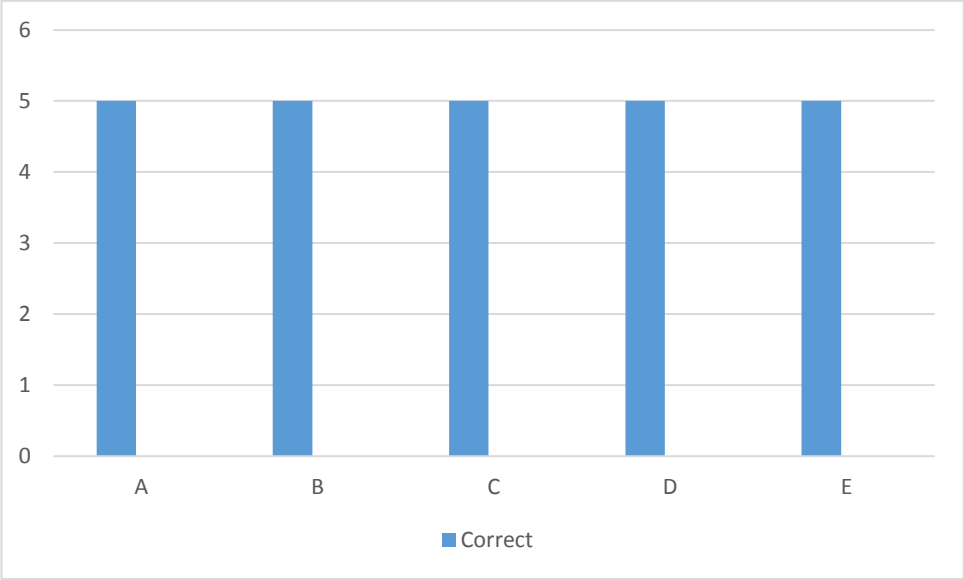

Figure 4.5: Results of Identification Test of /ð/ in Initial Position

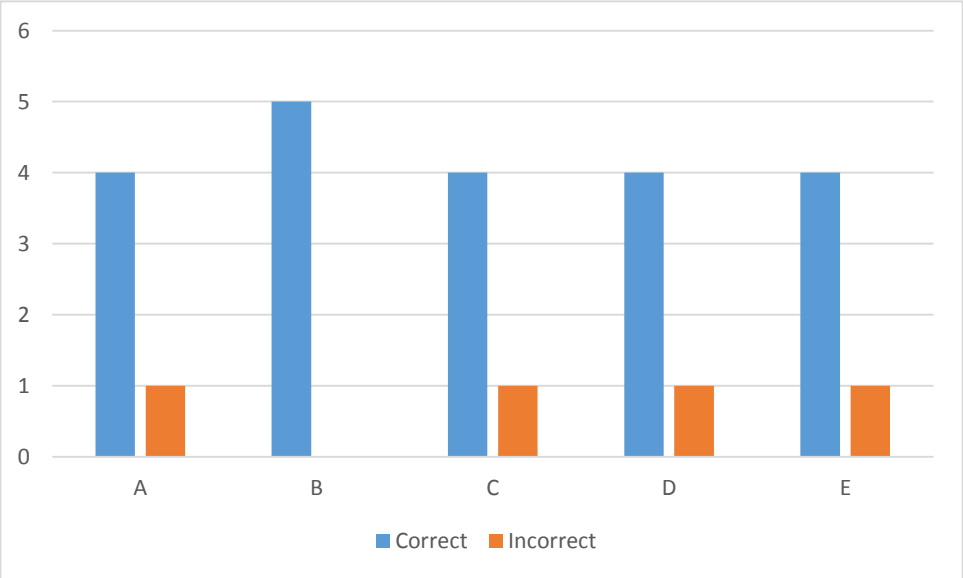

Figure 4.6: Results of Identification Test of /ð/ in Final Position

4.1.1.4. Findings of Identification Test of /v/, /θ/ and /ð/ in Initial and Final Positions

In this test, out of 30 words, respondent A identified 21 words correctly and incorrectly identified 9 words. The words that the respondent inaccurately identified were *both, thread, vest, prove, threat, seethe, oath, three and birth*. Substitution occurred in the final position than in the initial position. The respondent substituted *thread* with *trait, vest* with *best, threat* with *trait* and *three* with *tree*. In the final position the respondent substituted *both* with *but, prove* with *probe, seethe* with *seed, oath* with *oat* and *birth* with *but*. The respondent replaced /v/ with /b/, /θ/ with /t/ and /ð/ with /d/.

No error was made by respondent B in the identification of these sounds /v/, /θ/ and /ð/ in both initial and final positions. Respondent C inaccurately identified 3 words. The words that the respondent incorrectly identified were *vest, threat* and *seethe*. The respondent replaced *vest* with *best, threat* with *treat* and *seethe* with *seed*. The replacement is more in initial position than in the final position. The respondent replaced /v/ with /b/, /θ/ with /t/ and /ð/ with /d/. Respondent D inaccurately identified 2 words, one in the initial position and the other in the final position. The respondent substituted *threat* with *treat* and *seethe* with *sieve*. Respondent E incorrectly identified only one word in the final position. The respondent substituted *seethe* with *seed*.

It is clearly shown in this test that respondents A and C have more problem in identifying these sounds /v/, /θ/ and /ð/. The result of all the respondents in this test showed that the respondents tend to be more successful in identifying /v/, /θ/ and /ð/ sounds in initial position than in the final position. The errors made in initial position were 7 while in the final position were 8.

There are a total of 150 tokens in this test. Out of which, 135 were identified correctly, which represent 90% while 15 tokens were incorrectly identified which represent 10%. The respondents were better at identifying /v/ and /ð/ than on /θ/. The

total of errors made by the respondents on /v/ in initial position was 8% while in the final position was 4%. No error was made in identifying /ð/ in the initial position. In the final position there were 16% errors. Identification of /θ/ sound was the poorest compared to all other sounds 20% of errors were recorded at the initial position while 12% at the final position.

The respondents identified correctly 92% of /v/ in the initial position accurately and 96% in the final position. They also identified /ð/ 100% correct in the initial position 25 (100%) and 84% correct in the final position. They identified English /θ/ 80% correct in the initial position and 88% in the final position. Although the words were presented in random order, the participants were consistent in their responses which confirm that their responses were based on their own perception and that they were not merely guessing. The respondents presented their answers by writing the words in English.

4.1.2. AX Discrimination Test

The AX discrimination task determines whether the respondents could discriminate between English /v/ and /b/, /θ/ and /t/, /ð/ and /d/. In the task, instructions were given to the respondents was to tick 1 or 2. 1 stands for if the first consonant is different from the second consonant while 2 if the two sounds are the same. Two pairs of word were played to the listening of the respondents.

4.1.2.1. AX Discrimination Test of /v/ in Initial and Final Positions

There are 15 sequences, 10 in the initial and 5 in the final position.

Table 4.4 shows that one of the respondents (D) was able to discriminate all the 10 sequences correctly. Another respondent (E) was able to discriminate 9 out of 10

sequences accurately while wrongly discriminate 1 (*van van*). Respondent (A) was able to discriminate 7 out of 10 sequences correctly and wrongly discriminate 3 (*van van, vote vote, voice boys*) out of 10 sequences. Respondent B was able to discriminate 6 out of 10 sequences and wrongly discriminate 4 sequences (*vat vat, vest best, van ban,* and *vat bat*). Another respondent (C) was able to discriminate 6 out of 10 sequences accurately and incorrectly discriminate 4 sequences (*vest best, van ban, voice boys* and *vote boat*). The mean score for correct answers is 7.6 and for incorrect is 2.4.

Table 4.4 reveals that 2 of the respondents (B and D) discriminated all the 5 sequences correctly. Respondent C was able to discriminate 4 out of 5 sequences correctly while wrongly discriminate 1 (*prove probe*) out of 5 sequences. Respondent E was able to discriminate 4 out of 5 sequences correctly but discriminate 1 (*move move*) out of 5 sequences wrongly. Respondent A discriminated 2 out of 5 sequences accurately but discriminated 3 (*live live, move move, prove probe*) out of 5 sequences wrongly. The mean score for correct answers is 4 and for incorrect is 1.

Table 4.4: Results of AX Discrimination Test of /v/ in Initial and Final Positions

Respondent	Initial Position		Final Position	
	Correct	Incorrect	Correct	Incorrect
A	7	3	2	3
B	6	4	5	0
C	6	4	4	1
D	10	0	5	0
E	9	1	4	1
Total	38	12	20	5

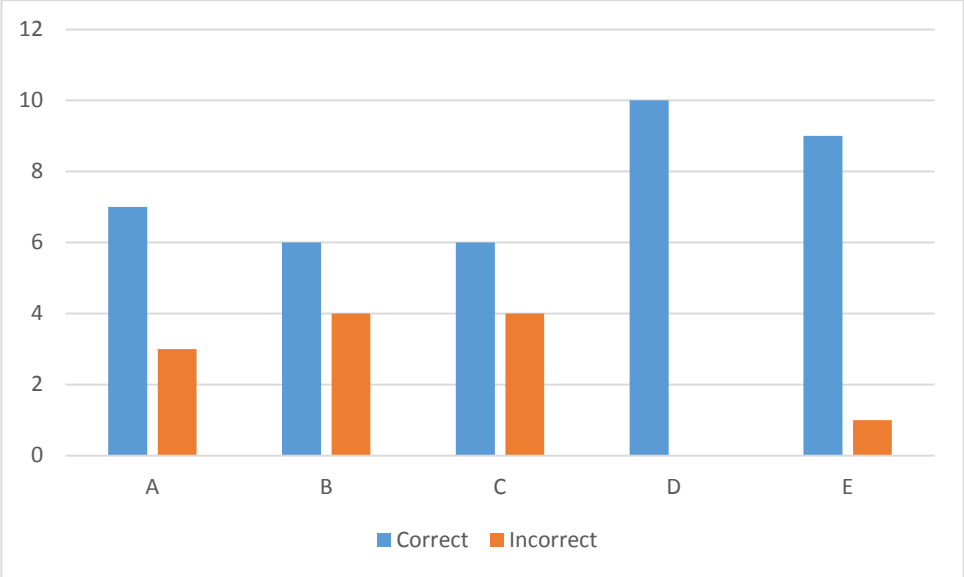

Figure 4.7: Results of AX Discrimination Test of /v/ in Initial Position

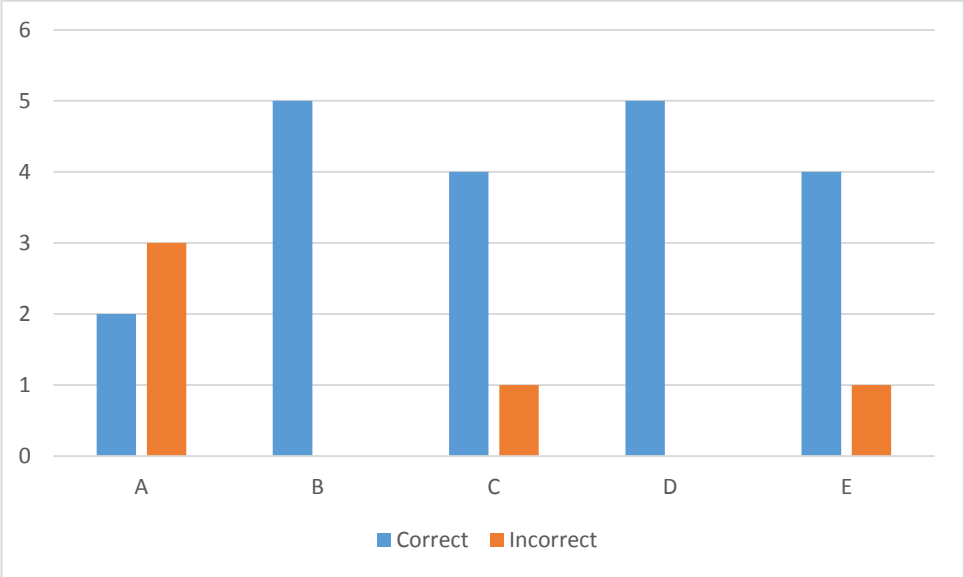

Figure 4.8: Results of AX Discrimination Test of /v/ in Final Position

4.1.2.2. AX Discrimination Test of /θ/ in Initial and Final Positions

This sound has 16 sequences, 9 in the initial and 7 in the final position.

Table 4.5 indicates that one of the respondent (D) was able to discriminate all the 9 sequences comprising 100% of the sequences correctly. Another respondent (E) was able to discriminate 8 out of 9 sequences or 89% of the sequences accurately while wrongly discriminate 1 (*tin thin*) sequence. One respondent (B) was able to discriminate

7 out of 9 or 78% of the sequences correctly and wrongly discriminated 2 (*three three, tin thin*) out of 9 sequences. Respondents A was able to discriminate 6 sequences out of 9 sequences or 67% while wrongly discriminated 3 (*three three, thread thread, trice thrice*) sequences or 33%. Another respondent (C) was able to discriminate 6 out of 9 sequences or 67% while incorrectly discriminated 3 (*thin thin, tread thread, trice thrice*) sequences or 33%. The mean score for correct answers is 7.2 and for incorrect is 1.8.

Table 4.5 and Figure 4.10 show that 3 of the respondents (B, D and E) discriminated all the 7 sequences correctly. Respondent A discriminated 6 out of 7 sequences correctly and wrongly discriminated 1 (*death death*) out of 7 or 14% of the sequences. Respondent C discriminated 4 out of 7 sequences accurately but discriminated 3 (*both bought, bath bat, date death*) out of 7 sequences wrongly. The mean score for correct answers is 6.2 and for incorrect is 0.8.

Table 4.5: Results of AX Discrimination Test of /θ/ in Initial and Final Positions

Respondent	Initial Position		Final Position	
	Correct	Incorrect	Correct	Incorrect
A	6	3	6	1
B	7	2	7	0
C	6	3	4	3
D	9	0	7	0
E	8	1	7	0
Total	36	9	31	4

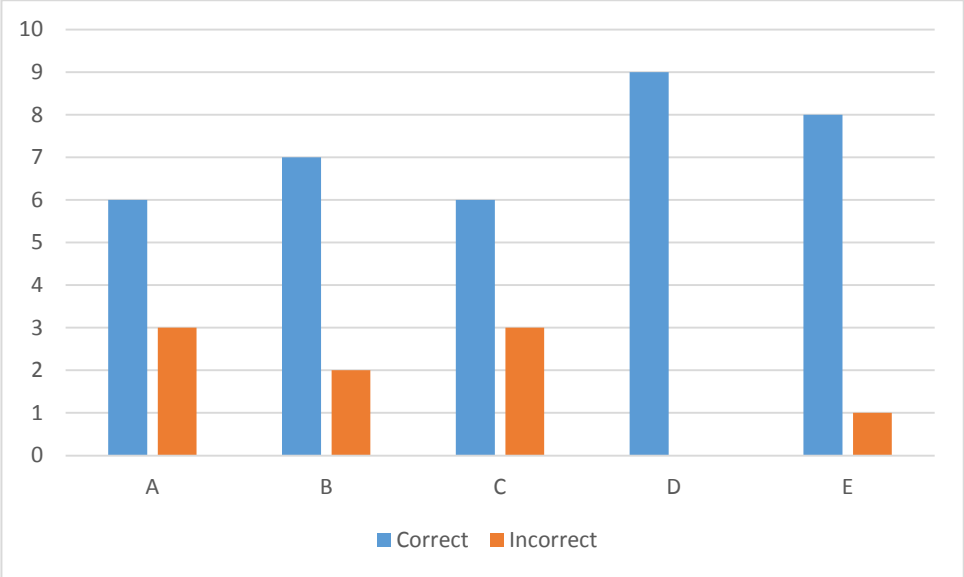

Figure 4.9: Results of AX Discrimination Test of /θ/ in Initial Position

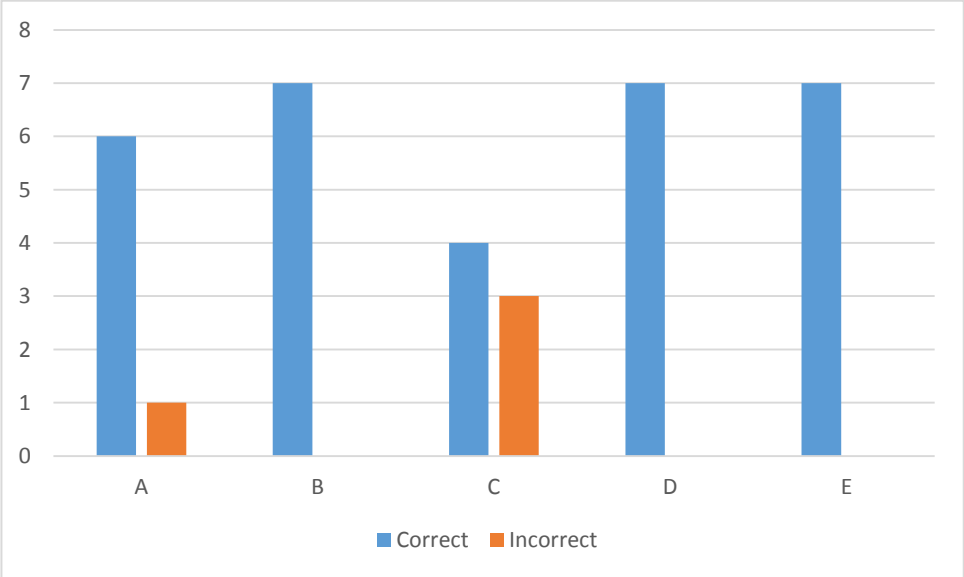

Figure 4.10: Results of AX Discrimination Test of /θ/ in Final Position

4.1.2.3. AX Discrimination Test of /ð/ in Initial and Final Positions

In this test, there are 15 sequences, 7 in the initial and 7 in the final position.

Table 4.6 reveals that respondent B was able to discriminate 6 sequences out of 7 or 86% of the sequences accurately and wrongly discriminated 1 (*dare there*). Respondent D was also able to discriminate 6 sequences out of 7 sequences accurately

and inaccurately discriminated 1 (*day they*) sequence. Respondent E was able to discriminate 6 sequences out of 7 or 86% of the sequences correctly and incorrectly discriminated 1 (*there there*) sequence out of 7 or 14% of the sequences. Respondent A was able to discriminates 5 sequences out of 7 accurately and inaccurately discriminated 2 (*they they* and *there there*) sequences out of 7 or 29% of the sequences. Another respondent (C) was able to discriminate 4 sequences out of 7 while wrongly discriminated 3 (*day they, dare there, doze those*) sequences out of 7 or 43% of the sequences. The mean score for correct answers is 5.4 and for incorrect is 1.6.

Table 4.6 indicates that respondent C was able to discriminate 6 sequences or 86% of the sequences excellently and misperceived 1 (*weed with*) sequence out of 7 sequences or 14% of the sequences. Respondent D was able to discriminate 6 sequences out of 7 sequences and discriminated 1 (*loathe loathe*) sequence wrongly. Another respondent (E) was able to discriminate 6 sequences or 86% of the sequences accurately and inaccurately discriminated 1 (*breed breathe*) sequence out of 7 sequences or 14% of the sequences. While respondent B was able to discriminate 5 sequences out of 7 sequences accurately and inaccurately discriminated 2 (*breathe breathe* and *loathe loathe*) sequences out of 7 sequences. Respondent A was able to discriminate 4 sequences out of 7 sequences correctly and incorrectly discriminated 3 (*with with, breathe breathe, seethe seethe*) sequences out of 7 or 43% of the sequences. The mean score for correct answers is 5.4 and for incorrect is 1.6.

Table 4.6: Results of AX Discrimination Test of /ð/ in Initial and Final Positions

Respondent	Initial Position		Final Position	
	Correct	Incorrect	Correct	Incorrect
A	5	2	4	3
B	6	1	5	2
C	4	3	6	1
D	6	1	6	1
E	6	1	6	1
Total	27	8	27	8

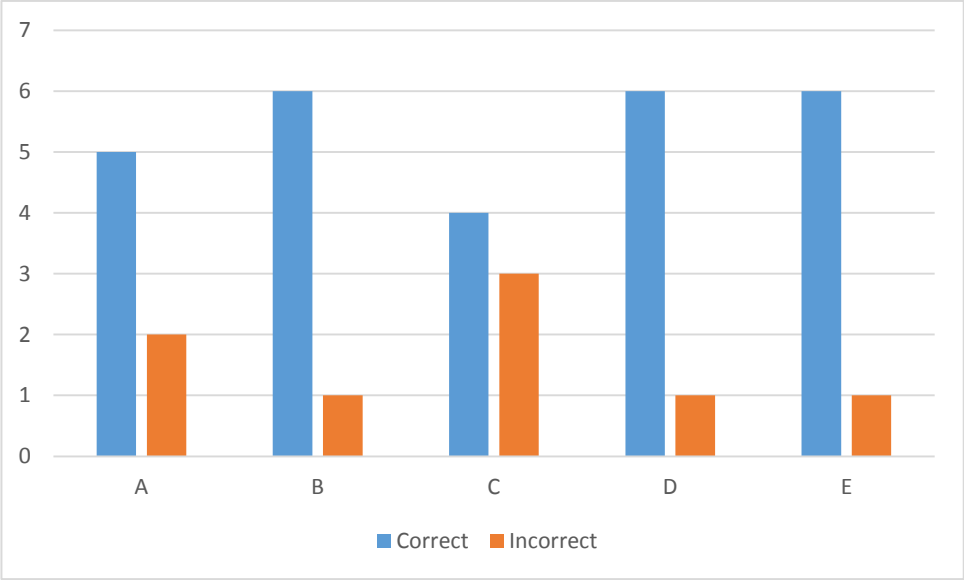

Figure 4.11: Results of AX Discrimination Test of /ð/ in Initial Position

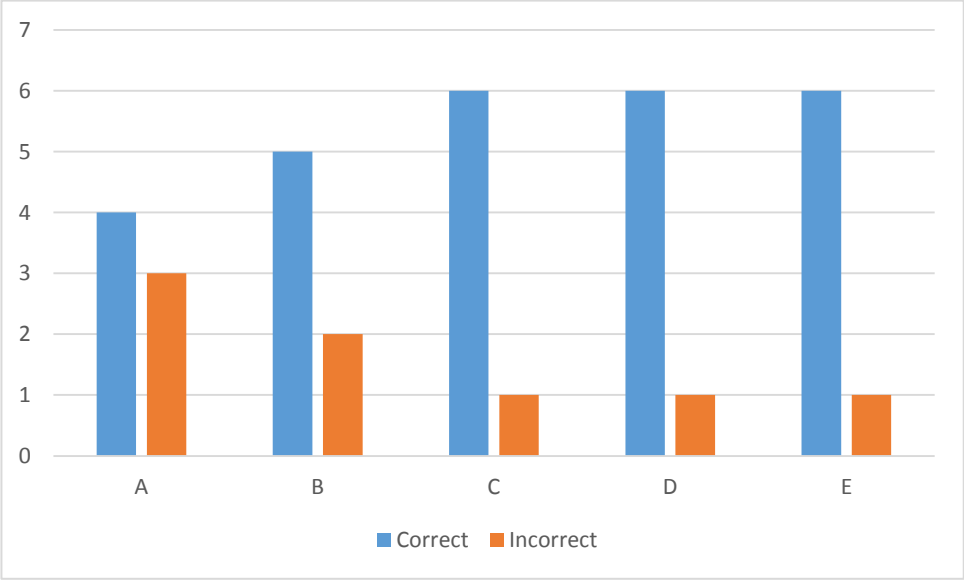

Figure 4.12: Results of AX Discrimination Test of /ð/ in Final Position

4.1.2.4. Findings of AX Discrimination Test of /v/, /θ/ and /ð/ in Initial and Final Positions

In the AX discrimination test, out of the total of 225 sequences, 179 or 80% were discriminated correctly, while incorrectly discriminated 46, which equals to 20%. Analysis of the results suggests that the respondents were more successful in discriminating the voiceless dental fricative /θ/ than voiceless labio-dental fricative /v/ and voiced dental fricative /ð/. They successfully discriminated /θ/ in 84% of the total sequences and incorrectly discriminate the sound by 16% of the total sequences. They were able to discriminate /v/ in 77% of the total sequences accurately and inaccurately discriminated /v/ in 23% of the total sequences. The respondents were able to discriminate /ð/ in 77% of the total sequences correctly and wrongly discriminate the sound in 23% of the total sequences. Sequences with words final /v/ and /θ/ seemed to cause few problems for discrimination as only 20% and 11% of the errors could be attributed to the target sounds in these particular environments. The sequences containing /v/, /θ/, and /ð/ in word initial and word final /ð/ were more challenging, because 24% of the tokens with /v/ in the initial position, 20% with /θ/ in word initial position, 23% of /ð/ in word initial position and 23% of /ð/ in word final position were discriminated incorrectly.

For word initial /ð/, sequences that contrasted with the alveolar stop /d/ constituted 25% of the errors, while word final /ð/ sequences contrasted with the alveolar stop /d/ comprised 13% of the incorrect answers. In word initial position, /v/ contrasted with bilabial stop /b/ made 32% of the errors. While word final /v/ sequences that contrasted with the bilabial stop /b/ constituted 20% of the wrong answers. Word initial /θ/, sequences contrasted with alveolar stop /t/ made up 20% of the errors. Word final /θ/, sequences contrasted with /t/ also formed 20% of the incorrect answers. In sum, word final /ð/ seemed easier to discriminate when it was contrasted with the

alveolar stop /d/ because the respondents made only 13% of the errors when discriminating this sound.

4.1.3. A 3 Alternative Forced Choice (3AFC) Discrimination Test

This task aims to test whether the respondents could differentiate /v/ from /b/, /θ/ from /t/ and /ð/ from /d/ or /z/. The respondents listen to some sets of sounds. They were asked to choose the investigated sound by ticking the correct sound on a given answer sheet.

4.1.3.1. 3AFC Discrimination Test of /v/

In this test, there were 2 sequences. These were: *vest, best, first* and *van, ban, fan*

Table 4.7 shows that 1 of the respondent (D) discriminated all the 2 sequences. Respondent E was able to discriminate 1 (*van ban fan*) sequence out of 2 sequences correctly and incorrectly discriminated 1 (*vest best first*) sequence out of 2 or 50% of the sequences. While respondents A, B and C were unable to discriminate all the 2 sequences. The mean score for correct answers is 0.6 and for incorrect is 1.4.

Table 4.7: Results of 3AFC Discrimination Test of /v/

Respondent		
	Correct	Incorrect
A	0	2
B	0	2
C	0	2
D	2	0
E	1	1
Total	3	7

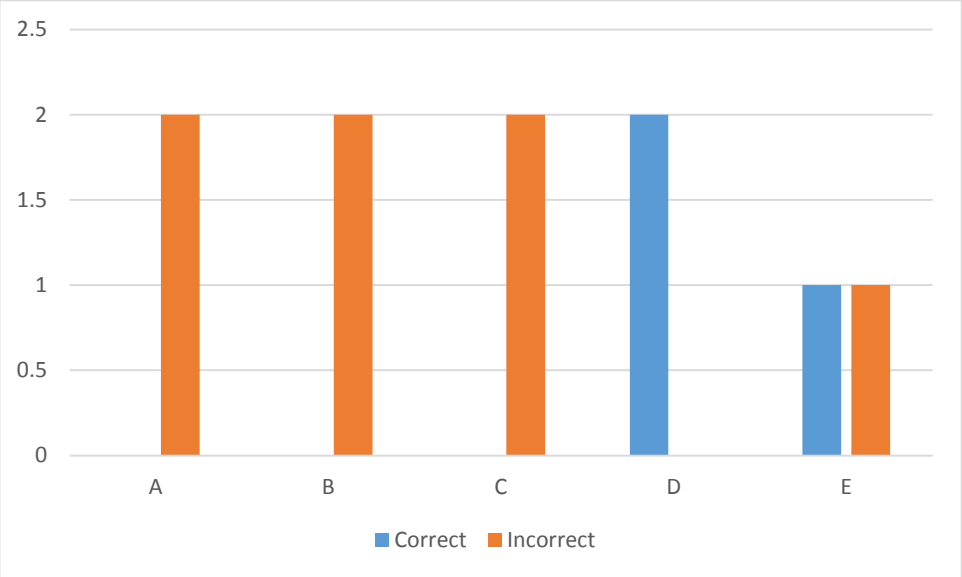

Figure 4.13: Results of 3AFC Discrimination Test of /v/

4.1.3.2. 3AFC Discrimination Test of /θ/

This sound has 4 sequences.

Table 4.8 reveals that 3 of the respondents (A, D and E) were able to discriminate all the 4 sequences which constitute 100% of the sequences correctly. Respondent C was able to discriminate 3 sequences out of 4 which constitute 75% of the sequences accurately and wrongly discriminated 1(*both bought bus*) sequence out of 4 which constitutes 25% of the sequences. While respondent B was able to discriminate only 2 (*death date daze* and *bath bat bus*) sequences out of 4 which constituted 50% of the sequences correctly and inaccurately discriminated 2 (*thin tin sin* and *both bought bus*) sequences out of 4 which constituted 50% of the sequences. The mean for correct answers is 3.4 and for incorrect is 0.6.

Table 4.8: Results of 3AFC Discrimination Test of /θ/

Respondent		
	Correct	Incorrect
A	4	0
B	2	2
C	3	1
D	4	0
E	4	0
Total	17	3

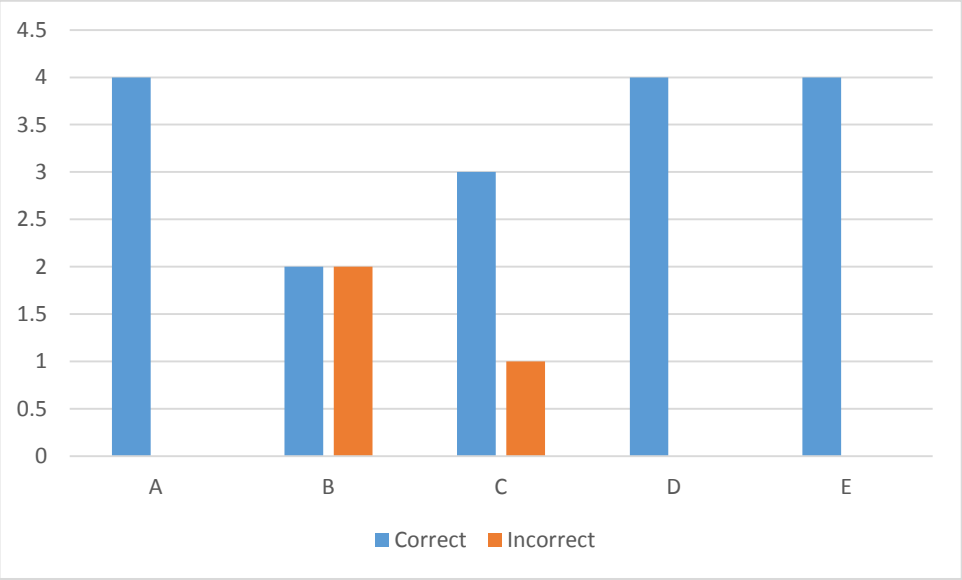

Figure 4.14: Results of 3AFC Discrimination Test of /θ/

4.1.3.3. 3AFC Discrimination Test of /ð/

This sound also has 4 sequences.

Table 4.9 indicates that 3 of the respondents (B, D and E) were able to discriminate all the 4 sequences which consist of 100% of the sequences accurately. Respondent A was able to discriminate 3 sequences out of 4 which consist of 75% of the sequences correctly and incorrectly discriminated 1 (*then den zen*) sequence out of 4 which consists of 25% of the sequences. While respondent C was able to discriminate only 2 (*seethe seed seize* and *breathe breed breeze*) sequences out of 4 which consist of 50% of the sequences accurately and inaccurately discriminated 2 (*then den zen* and *with weed*

whizz) sequences out of 4 which consist of 50% of the sequences. The mean for correct is 3.4 and for incorrect is 0.6.

Table 4.9: Results of 3AFC Discrimination Test of /ð/

Respondent		
	Correct	Incorrect
A	3	1
B	4	0
C	2	2
D	4	0
E	4	0
Total	17	3

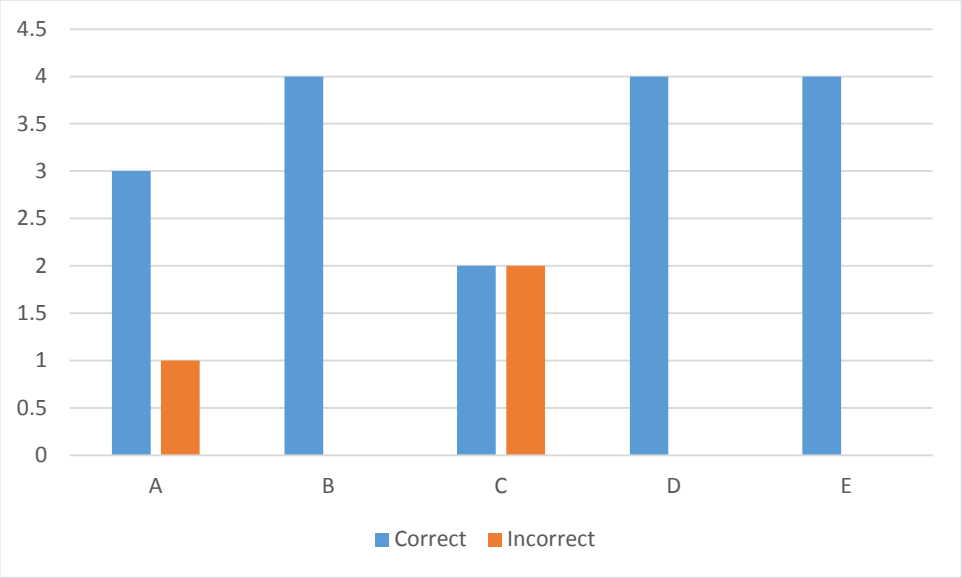

Figure 4.15: Results of 3AFC Discrimination Test of /ð/

4.1.3.4. Findings of 3AFC Discrimination Test of /v/, /θ/ and /ð/

In this test, 50 sequences have been addressed. The respondents were able to discriminate 37 sequences which constitute 74% of the total sequences addressed. On the other hand, 13 sequences comprising 26% of the total sequences were incorrectly discriminated.

For /v/, the respondents were unable to discriminate the sound correctly. The error committed in discriminating the sound was 7 which comprised 70% of the total sequences. They discriminated 3 out of 10 comprising 30% of the sequences correctly.

This shows that the performance of the respondents was poor on the discrimination of voiced labio-dental fricative /v/. They assimilated the target sound closer to bilabial stop /b/ and labio-dental fricative /f/.

For /θ/, the respondents were able to discriminate 17 out 20 sequences comprising 85% of the total sequences correctly. While they were unable to discriminate 3 out of 20 comprising 15% of the total sequences correctly. The 15% error were due to distraction of the sounds /t/ and /s/. Their perception of this sound was good. They did not show a significant difficulty in discriminating the target sound.

For /ð/, the respondents were able to discriminate 17 out of 20 sequences which constitute 85% of the total sequences accurately while they wrongly discriminated 3 out of 20 comprising of 15% of the total sequences. The results show that the performance of the respondents in this test was far from perfect, although they were more consistent in this test. They were only 15% difficulty in discriminating this sound. In all the three investigated sounds in this test, the respondents' perception of /θ/ and /ð/ seemed relatively better than that of /v/ sound.

4.2. Production Test

In the production test, there were thirty (30) words which contained /v/, /θ/, and /ð/. Each sound has five (5) words in initial and in final positions.

The respondents' productions of the target phonemes were rated by three non-native speaker raters. The following tables show the average scores awarded by the raters. During the rating process, a 5-point Likert type scale from 5-1 was employed. 5 native-like, 4 near native-like, 3 different from natives but understandable, 2 hardly understandable, 1 unintelligible (Syed, 2013). Porte (2002) recommended the use of

Likert scale in assessment of this nature. A printed copy of the sample chart was provided to the raters along with instructions. Refer to Appendix I for more details.

The results in the following tables show the average ratings of individual respondent in the production of /v/, /θ/ and /ð/ in initial and final positions. Refer to Appendix M for the individual results.

Table 4.10 shows the scores of the respondents, ranging from 2.8 score to 4 score. Respondent B had the highest mean score with 4 followed by E which had 3.8, respondent C with score of 3.4 and D with 3.2. Respondent A had the lowest mean score of 2.8, the raters' evaluated respondent A as hardly understandable (2) in the production of the word *voice*.

Table 4.10: Results of the Production Test of /v/ in Initial Position

Respondent	Total Scores	Mean score
A	14	2.8
B	20	4
C	17	3.4
D	16	3.2
E	19	3.8
Total	86	17.2
Mean	17.2	3.44

Table 4.11 also shows the scores of the respondents in the production of labio-dental /v/ in final position. Respondents A, B and C had the mean score of 3.2 respectively. Respondent D and E had mean score of 3.6 each. This reveals that the production of the /v/ in final position is more difficult for the respondents than the production of the /v/ in onset position. As the total scores is 16.8 compared to the total scores in the initial position (17.2).

Table 4.11: Results of /v/ in Final Position

Respondent	Total Scores	Mean score
A	16	3.2
B	16	3.2
C	16	3.2
D	18	3.6
E	18	3.6
Total	84	16.8
Mean	16.8	3.36

Table 4.12 shows the results of the production of the onset voiceless dental fricative. Respondent E had the highest mean score of 3.8 followed by D with 3.4. Respondent B had 2.6, A and C had the mean score of 2.4. The judges considered respondent A as hardly understandable (2) in the production of these words (*thread, thought* and *three*). Respondent B was rated as hardly understandable (2) in the production of (*threat* and *thought*). Another respondent (C) was evaluated as hardly understandable (2) in the production of these words (*thread, threat* and *thought*).

Table 4.12: Results of /θ/ in Initial Position

Respondent	Total Scores	Mean score
A	12	2.4
B	13	2.6
C	12	2.4
D	17	3.4
E	19	3.8
Total	73	14.6
Mean	14.6	2.92

As can be seen from Table 4.13, the results show the mean score of the respondents, range from 2.2 score to 4. Respondent D had the highest score with 4, B and E had the mean of 3. Respondent A had 2.2 while C had 2. Respondent C was rated by the raters as hardly understandable (2) in the production of these words (*death, both, oath, birth* and *fifth*). Another respondent (A) was also judged as hardly understandable (2) in the

production of these words (*both, oath, birth* and *fifth*). The results reveal that the respondents were able to produce the /θ/ in the onset better than in coda position.

Table 4.13: Results of /θ/ in Final Position

Respondent	Total Scores	Mean score
A	11	2.2
B	15	3
C	10	2
D	20	4
E	15	3
Total	71	14.2
Mean	14.2	2.84

Table 4.14 reveals that respondents D and E had the mean score of 3 followed by B with 2.8 and A with 2.4. Respondent A was rated as hardly understandable (2) in the production of (*that, these, then*). Another respondent (B) was judged as hardly understandable (2) in (*there*). Respondents C was evaluated as hardly understandable (2) in the production of (*then*) and unintelligible (1) in (*that, these, they* and *there*). The results also reveal that respondent C had more difficulty in producing the voiced dental fricative in the coda position than the other respondents.

Table 4.14: Results of /ð/ in Initial Position

Respondent	Total Scores	Mean score
A	12	2.4
B	14	2.8
C	6	1.2
D	15	3
E	15	3
Total	62	12.4
Mean	12.4	2.48

Table 4.15 shows that the dental /ð/ was less accurately produced by respondents C with a mean score of 1. D had mean score of 2.8, respondent B had 2.6 and A with 2 mean score. Respondent E had the highest mean score of 3.4. The raters rated respondent C as unintelligible (1) in the production of all the 5 words (*booth, seethe, smooth, with* and

breathe). Respondent A was judged as hardly understandable (2) in the production of these words (*booth, seethe, smooth, with* and *breathe*). Respondent B was judged as hardly understandable (2) in two words (*seethe* and *breathe*). Another respondent (D) was rated as hardly understandable (2) when pronouncing the word *seethe*. This reveals that the production of the /ð/ in coda position is more difficult for the respondents than in the onset.

Table 4.15: Results of /ð/ in Final Position

Respondent	Total Scores	Mean score
A	10	2
B	13	2.6
C	5	1
D	14	2.8
E	17	3.4
Total	59	11.8
Mean	11.8	2.36

Thus, in the production of the sounds /v/, /θ/ and /ð/ in initial and final positions that respondent E had the highest mean scores of 20.6 which equals to 69%. Respondent D with 20 or 67%. Another respondent B with 18.2 or 60%. Respondent A with 15 or 50% while respondent C has 13.2 or 44% respectively. Therefore, the performance of respondents E, D and B in this test is better than that of respondents A and C.

The results show that the respondents performed better on the production of these sounds in the initial positions than those on the final positions. Generally, the respondents could not obtain an average score of 5 which means they were not evaluated by the non-native speaker raters as 'native-like' in their production of English labio-dental and dental fricatives.

As can be seen from the table that the respondents' performance was poorer on the production of these sounds in the final positions than those on the initial positions. The respondents could not obtain an average score of 5 which means they were not

evaluated by the non-native speaker raters as 'native-like' in their production of English labio-dental and dental fricatives.

Table 4.16: Results of Production Test in Initial and Final Positions

Initial				Final			
Sounds	Total Score	Total Mean Score	Mean	Sounds	Total Score	Total Mean Score	Mean
/v/	86	17.2	3.44	/v/	84	16.8	3.36
/θ/	73	14.6	2.92	/θ/	71	14.2	2.84
/ð/	62	12.4	2.48	/ð/	59	11.8	2.36

Table 5.1 shows the correct responses of perception and production tests of the respondents. In the production test we took the rating from 3-5 that is 3 different from natives but understandable, 4 near native-like and 5 native-like.

Table 4.17: Total Correct Responses of Perception and Production Tests

Task	Identification		AX Discrimination		3AFC		Production	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Respondent/Total correct responses	15	15	26	19	4	6	15	15
A	11	10	18	12	1	6	8	6
B	15	15	18	17	1	5	12	13
C	13	14	16	14	1	4	7	5
D	14	14	25	18	4	6	15	14
E	15	14	23	17	3	6	15	15

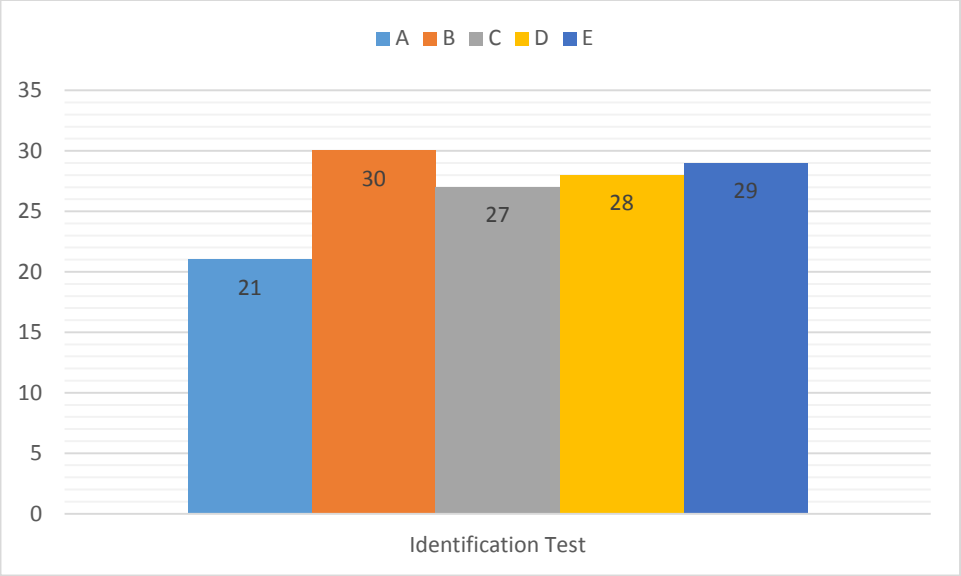

Figure 4.16: Correct Responses of the Respondents on Identification Test

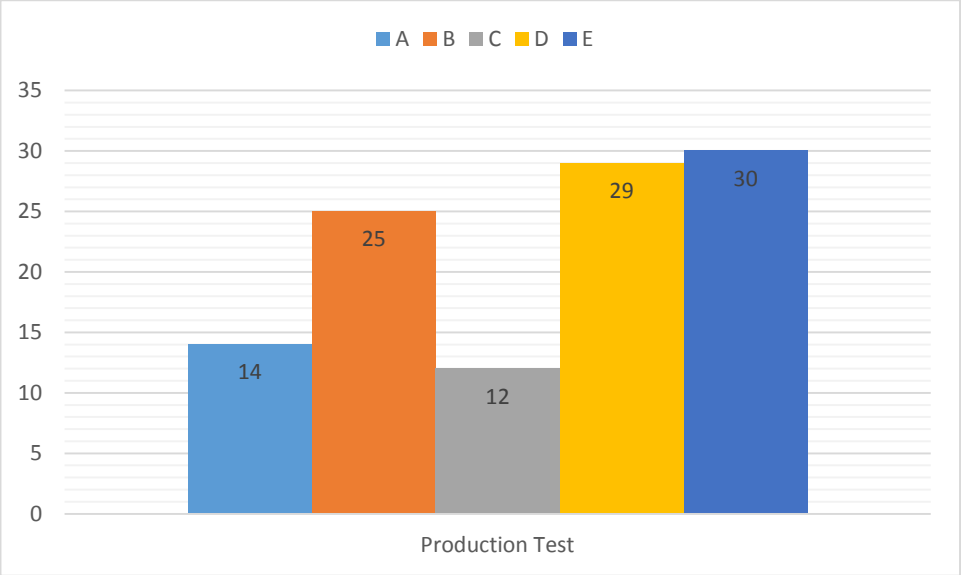

Figure 4.17: The Respondents Performance on Production Test

4.3. Discussion

The results presented in the previous section show that the respondents perceived English labio-dental and dental fricatives as bilabial stop /b/, alveolar stop /t/ and alveolar stop /d/. They perceived labio-dental and dental fricatives as bilabial stop, and alveolar stops in more trails. This shows that most of the respondents perceived the stimuli segmentally (Wester et al, 2007). It has been pointed out in the previous studies that second language speakers whose first language do not have English labio-dental and interdental fricatives perceive these consonants as bilabial and alveolar (Owolabi, 2012). And if they perceive these sounds /θ/ and /ð/ as /s z/ this is phonologically, because these sounds are most similar to /θ/ and /ð/ (Wester et al, 2007).

An interesting factor in the perception (Identification) test is that most of the respondents differentiated English labio-dental fricative and interdental fricatives from bilabial stop and alveolar stops accurately. The identification test results show that the respondents can identify English /v/, /θ/ and /ð/ quite easily as the accuracy of all the respondents is 90%. The AX discrimination test results show that the respondents can

discriminate English /v/, /θ/ and /ð/ as the accuracy of all the respondents is 80%. A 3 alternative forced choice discrimination test results show that the respondents can discriminate English /v/, /θ/ and /ð/ from /b/, /t/ and /d/ with 74%.

The results of the study provide empirical support that the pronunciation of the voiced labio-dental fricative /v/, voiceless interdental fricative /θ/ and voiced interdental fricative /ð/ are rather difficult for the respondents, as seen in the results of the three investigated sounds showed in the initial and final position at the word level. The results show that the respondents performed better on the production of these three sounds in the initial position than those on the final position. Generally, the respondents could not obtain an average score of 5 which means they were not considered by the non-native speaker raters as 'native-like' in their production of English labio-dental and interdental fricatives. These are the mean score of the three investigated sounds in the initial position. Labio-dental fricative /v/ mean=3.44, interdental fricative /θ/ mean=2.92 and interdental fricative /ð/ mean=2.48 respectively.

On the other hand, the respondents' performance was poorer on the production of these sounds in the final position than those in the initial position. The respondents could not obtain an average score of 5 which means that they were not evaluated by the non-native speaker raters as 'native-like' in their production of English labio-dental and interdental fricatives. Labio-dental fricative /v/ mean=3.36, interdental fricative /θ/ mean=2.84 and interdental fricative /ð/ mean=2.36 respectively.

The analysis of this study discovered that the dominant mispronunciation patterns that the respondents did was substitution. The respondents replaced /v/ with /b/, /θ/ with /t/ or /s/ and /ð/ with /d/ or /z/. Analysis of the research demonstrates that the substituted consonants found for this test resemble the postulated substitutions of Wester et al.'s study. Wester et al. (2007) suggested that native speakers of Dutch usually substitute /θ/ by [t] or [s], a finding which was confirmed in this test for /θ/ in

word-final position. /θ/ in word initial was also substituted by [t] and [s]. Next to these substitutions, the voiced alveolar stop [d] was also found in both positions. For the voiced dental fricative, Wester et al. (2007) proposed [d] and [z] as possible substitutions, a finding which corresponded with the substitutions of word-final /ð/.

Findings from this study also provided further support for previous studies suggested that the English consonants /v/, /θ/ and /ð/would pose problems to Hausa speakers of English (e.g. Akeredolu-Ale 2005; Akpan et al, 2012; Emeka-Nwobia, 2013; Ikani, 2004; Iyere, 2013; Oladimeji, 2013; Onike, 2009 as cited in Patrick et al, 2013; Owolabi, 2012; Wachuku, 2004). Furthermore, many ESL speakers in different part of the world whose phoneme inventories lack of these sounds /v/ /θ/ and /ð/ face difficulties in the production of those sounds. The previous studies that supported this finding (e. g. Ahmad, 2011; Al-Saidat, 2010; Altaha, 1995; Ammar & Alhumaid, 2009; Baros, 2003 as cited in Al-Saidat, 2010; Binturki, 2008; Chan & Li, 2000; Chan, 2006; Gonet & Pietron, 2006; Hanulikova & Weber, 2010; Kanokpermpoon, 2007; Nuhiu, 2013; Rehman et al, 2012; Tam, 2005; Tiono & Yostanto, 2008; Wester et al, 2007).

Moreover, the results of the study show that the position of the /v/, /θ/ and /ð/ sounds play important role in their pronunciation. Precisely, the current study discovered that their pronunciation was better in the initial position than in the final position. The analysis shows that word-final position was more problematic than word-initial in the pronunciation of /v/, /θ/ and /ð/. In word-final position, the mean score of each sound was /v/ mean=3.36, /θ/ mean=2.84 and /ð/ mean=2.36, while in word-initial position was /v/ mean=3.44, /θ/ mean=2.92 and /ð/ mean=2.48. The finding recommended that the respondents struggled more with the /v/, /θ/ and /ð/ articulation in word-final position than in word-initial position.

The finding of this study supported aspects of some studies in the literature. The finding supports Binturki's (2008) study which conducted a research on the

phonological problems of Arab ESL speakers. The study revealed that Arabs ESL speakers experience difficulties in the articulation of these consonants /r/, /v/ and /p/. The study discovered that these sounds are more problematic to Arab speakers. Especially when they occur in words final position than in the word initial position. The finding also supports study by Gonet & Pietron (2006) which conducted their study on the speech of Polish learners of English on interdental fricatives of English. The results of the current experimental study of the substitutions of the interdental fricatives of English, reveal that the identity of the element used by Polish students of English to substitute it depend on two factors: the voicing of the target sound, and the position in which it exist in the utterance. The voiced interdental fricative /ð/ is most often substituted by /v/ before consonants, and /d/ before vowels. Wheras the voiceless interdental fricative /θ/ can be substituted either by /f/ in contexts easy to articulate, and by /f/ or /t/ in consonantal clusters. In word-final positions, /ð/ is often devoiced to /θ/, and both are realized as /f/.

Another issue the present study investigated was the mispronunciation patterns in the Hausa ESL speakers' production of /v/, /θ/ and /ð/ and whether they vary for word-final or initial position. The analysis discovered that the dominant mispronunciation pattern was a substitution. Respondents replaced /v/ with /b/, /θ/ with /t/ or /s/ and /ð/ with /d/ or /z/. But the replacement was more in final position than in the initial.

The Speech Learning Model predicts a correspondence between perception and production. The findings of the study confirm the correspondence between the production and perception. The respondents who got better scores in perception also got relatively better scores in production. For example, respondents B, D and E. SLM claim that L2 learners will have more difficulty in acquiring second language sound that is similar to a sound of their native language, while new phonemes will present fewer

problems for the learners. The findings of this study confirm this, because in the present study respondents A, a male which has 37 years and C also a male with 30 years have more difficulty in acquiring second language sound that is similar to an L1. For instance, they misperceived and mispronounced L2 sounds, and they substituted /v/ with /b/, /θ/ with /t/ or /s/ and /ð/ with /d/ or /z/ in their perception and production of the investigated sounds.

The reason why they have deficiency in their perception and production is because of their mother tongue interference and insufficient knowledge of sounds and the sound system of English.

4.4. Conclusion

This chapter reported and discussed the results of the production and perception tests. The perception test consist of three tasks: - identification test, AX discrimination test, and a 3 alternative forced choice (3AFC) discrimination test. The results were presented in tables and figures.

The findings of the study confirm that the respondents who got better scores in perception also got relatively better scores in production. For example, respondents B, D and E. SLM claim that L2 learners will have more difficulty in acquiring second language sound that is similar to a sound of their native language, while new phonemes will present fewer problems for the learners. The findings of this study confirm this, because in the present study respondents A and C have more difficulty in acquiring second language sound that is similar to an L1. For instance, they misperceived and mispronounced L2 sounds, and they substituted /v/ with /b/, /θ/ with /t/ or /s/ and /ð/ with /d/ or /z/ in their perception and production of the investigated sounds.

CHAPTER 5

CONCLUSION

5.0. Introduction

This chapter summarizes the findings of the study and it provides limitations, implications, recommendations and future research. The aim of this study was to investigate and identify the difficulties faced by Nigerian Hausa speakers of English in the production and perception of fricative sounds of English. In order to achieve this, the research was aimed at answering three questions.

i. How do Nigerian Hausa ESL learners perceive /v/, /θ/ and /ð/ in initial and final positions at the word level?

The results in all the three tasks administered on the respondents, show that the respondents perceived English labio-dental /v/ and dental fricatives /θ, ð/ as a bilabial stop /b/, alveolar stops /t/ and /d/. This shows that most of the speakers perceived the stimuli segmentally (Wester et al, 2007). It has been pointed out in the previous studies that second language speakers whose first language do not have English labio-dental and dental fricatives perceive these consonants as bilabial and alveolar (Owolabi, 2012). And if they perceive these sounds /θ/ and /ð/ as /s z/ this is phonologically, because these sounds are most similar to /θ/ and /ð/ (Wester et al, 2007).

An interesting factor in the perception (identification) test results is that most of the respondents differentiated English labio-dental fricative and interdental fricatives from bilabial stop and alveolar stops accurately. The identification test results show that the respondents can identify English /v/, /θ/ and /ð/ quite easily as the accuracy of all the respondents is 90%. The AX discrimination test results show that the respondents can discriminate English /v/, /θ/ and /ð/ as the accuracy of all the respondents is 80%. And

also a 3 alternative forced choice discrimination test results show that the respondents can discriminate English /v/, /θ/ and /ð/ from /b/, /t/ and /d/ with 74%.

ii. How do Nigerian Hausa ESL learners produce /v/, /θ/ and /ð/ in initial and final positions at the word level?

The results of the study provide empirical support that the pronunciation of the voiced labio-dental fricative /v/, dental fricative /θ/ and dental fricative /ð/ are rather difficult for Hausa English speakers, as seen in the results of the three investigated sounds showed in the initial and final position at the word level. The results show that the respondents performed better on the production of these three sounds in the initial position than those on the final position. Generally, the respondents could not obtain an average score of 5 which means they were not considered by the non-native speaker raters as 'native-like' in their production of English labio-dental and dental fricatives. These are the mean score of the three investigated sounds in the initial position. Labio-dental fricative /v/ mean=3.44, dental fricative /θ/ mean=2.92 and dental fricative /ð/ mean=2.48 respectively.

On the other hand, the respondents' performance was poorer on the production of these sounds in the final position than those in the initial position. The respondents could not obtain an average score of 5 which means they were not evaluated by the non-native speaker raters as 'native-like' in their production of English labio-dental and dental fricatives. Labio-dental fricative /v/ mean=3.36, dental fricative /θ/ mean=2.84 and dental fricative /ð/ mean=2.36 respectively.

The analysis of this study discovered that the dominant mispronunciation patterns that the respondents did was substitution. The respondents replaced /v/ with /b/, /θ/ with /t/ or /s/ and /ð/ with /d/ or /z/. Analysis of the study demonstrates that the

substitution consonants found for this test resemble the postulated substitutions of Wester et al.'s study. Wester et al. (2007) suggested that native speakers of Dutch usually substitute /θ/ by [t] or [s], a finding which was confirmed in this test for /θ/ in word-final position. /θ/ in word-initial was also substituted by [t] and [s]. Next to these substitutions, the voiced alveolar stop [d] was also found in both positions. For the voiced dental fricative, Wester et al. (2007) proposed [d] and [z] as possible substitutions, a finding which corresponded with the substitutions of word-final /ð/.

Findings from this study also provided further support for previous studies suggesting that the English consonants /v/, /θ/ and /ð/ would pose problems to Hausa speakers of English (e.g. Akeredolu-Ale 2005; Akpan et al, 2012; Emeka-Nwobia, 2013; Ikani, 2004; Iyere, 2013; Oladimeji, 2013; Onike, 2009 as cited in Patrick et al, 2013; Owolabi, 2012; Wachuku, 2004). Furthermore, many ESL speakers in different parts of the world whose phoneme inventories lack these sounds /v/ /θ/ and /ð/ face difficulties in the production of those sounds. The previous studies that supported this finding (e. g. Ahmad, 2011; Al-Saidat, 2010; Altaha, 1995; Ammar & Alhumaid, 2009; Baros, 2003 as cited in Al-Saidat, 2010; Binturki, 2008; Chan & Li, 2000; Chan, 2006; Gonet & Pietron, 2006; Hanulikova & Weber, 2010; Kanokpermpoon, 2007; Nuhiu, 2013; Rehman et al, 2012; Tam, 2005; Tiono & Yostanto, 2008; Wester et al, 2007).

Moreover, results of the study show that the position of the /v/, /θ/ and /ð/ sounds play an important role in their pronunciation. Precisely, the current study discovered that their pronunciation was better in the initial position than in the final position. The analysis shows that word-final position was more problematic than word-initial in the pronunciation of /v/, /θ/ and /ð/. In word-final position, the mean score of each sound was /v/ mean=3.36, /θ/ mean=2.84 and /ð/ mean=2.36, while in word-initial position was /v/ mean=3.44, /θ/ mean=2.92 and /ð/ mean=2.48. The finding

recommended that Hausa speakers struggled more with the /v/, /θ/ and /ð/ articulation in word-final position than in word-initial position.

iii. What is the relationship between the production and perception of /v/, /θ/ and by Nigerian ESL speakers?

The results confirm the correspondence between the production and perception. The respondents who got better scores in perception also got relatively better scores in production. For example, respondents B, D and E. In other words, those who perceive second language sound better also produce it better. In this research, the perception is determined on the basis of identification test, not discrimination test, because the real understanding of second language sound by respondents can be through identification test, not discrimination test.

In the process of acquisition, perception occurs prior to production. The results verify this because the perception test results are better than the production test results. If we take the mean scores of the E, D and B respondents in production test (20.6, 20 and 18.2) and convert them to percentage we can say that respondents E, D and B have an average of 69%, 67% and 60% accuracy in production test. Similarly respondents A and C have 50% and 44% accuracy in the production test. On the other hand, the accuracy of the respondents B, E and D in perception (identification) test is 100%, 97% and 93% while respondents C and A have 90% and 70% respectively. Therefore, the respondents are better in perception than production. This in line with the claim that there is a period of accurate perception before accurate production in the process of learning a second language (Osborne, 2010). The findings of this study support the findings of Kluge et al (2007) and Ha (2001), for example, found strong correspondence between perception and production of consonants of English by L2 learners. The finding also supports Chan's (2001) study which investigated the perception and

production of English word-initial consonants by Cantonese speakers. The study found a positive correlation between the two. Learners who consistently mispronounced the target consonants had significantly poorer perceptual performance than those who consistently produced the same sounds correctly.

If the speech production and perception procedures are closely related, it is possible that second language learners who are good at perceiving second language speech sounds are probable to be good at producing the sounds (Hottari & Iverson, 2011).

The Speech Learning Model predicts a correspondence between perception and production. The findings of the study confirm the correspondence between the production and perception. The respondents who got better scores in perception also got relatively better scores in production. For example, respondents B, D and E. SLM claim that L2 learners will have more difficulty in acquiring second language sound that is similar to a sound of their native language, while new phonemes will present fewer problems for the learners. The findings of this study confirm this, because in the present study respondents A, a male which has 37 years and C also a male with 30 years have more difficulty in acquiring second language sounds. For instance, they misperceived and mispronounced L2 sounds, and they substituted /v/ with /b/, /θ/ with /t/ or /s/ and /ð/ with /d/ or /z/ in their perception and production of the investigated sounds.

Therefore, the speech learning model by Flege (1995) about the correspondence between perception and production of L2 phonemes is verified.

5.1. Limitations

This study has a number of limitations. It was limited to investigating the difficulties Hausa learners encounter when producing and perceiving English fricative sounds.

Thus, the study will only focus on the fricative sounds /v/, /θ/ and /ð/ in the initial and final positions. This study does not deal with sentences, but only word in isolation. The reason is that we want to pay attention to the target sounds whether the participants would produce and perceive the sounds correctly or they will substitute the target sounds with other sounds. The target sounds are /v/, /θ/ and /ð/ in initial and final word positions and the possible substitutions of the English fricatives for Nigerian Hausa speakers are /b/, /t/, /d/, /s/ and /z/.

The study is conducted on 5 (3 males and 2 females) Hausa speakers who are studying at the University of Malaya. The reason for choosing Hausa speakers from University of Malaya is because of the limitation of time. The raters have the same L1 with the respondents. The study attempted to use the native speakers for the rating and the production of sounds but unfortunately did not come to reality due to their non-response.

5.2. Implications

The findings of this study might be helpful for teachers, students. In this study, the results reveal the importance of phonological knowledge of both languages. For example, if a learner, teacher is aware of the fact that the absence of the sounds /v/, /θ/ and /ð/ from the Hausa phonemic inventory are likely to cause production and perception problems, then the student, teacher can give more specific attention to these sounds. However, a student, teacher who has good phonological background in both languages may also be able to determine that certain phonological environments produce more problems than others, and therefore, provide more systematic remedial work in these environments.

5.3. Recommendations

The achievement of language teaching and at all levels is always determined by the nature and quality of training which the teachers undergo. Hence there is need for the teachers to acquire the knowledge of phonetics and phonology to enable them teach the students with different speech production and speech perception problems. Good and quality training should be giving to teachers in the phonological structures of English language and learn the act of proper production and perception of English consonants and vowels in order to increase the credibility of the occupation. Student's intelligibility problem poses a lot of challenges to the teachers. It is, therefore, suggested that all language teachers should be given a special and continuous training in the speech production and speech perception.

Language laboratory is required in every school as a means of correcting speech defects in students. Teachers should also vary their teaching methods and styles so as to motivate the students. Other regular programmes like seminars, conferences and workshops are very important because they are the way where teachers could interact with other colleagues from other institutions. This will renew and refresh their knowledge of speech perception and speech production creative.

5.4. Future Research

Considering the fact that the sample of this study was limited to 5 respondents and 30 words in production test, 30 words in identification test, 45 sequences in AX discrimination test and 10 sequences in 3 alternative forced choice discrimination test have been used to assess learners' perception and production, it is evident that more research should be conducted on this matter. The findings from this research could be validated through a future research with larger samples. Also it is suggested that a larger

number of words and sequences should be used in order to obtain more detailed information regarding the difficulties of perception and production of /v/, /θ/ and /ð/. Furthermore, conducting a similar study with native speakers of other languages who learn English as an L2 could also contribute to the validity of the findings of the current study.

REFERENCES

Adegbija, E. (1989). Lexico-Semantic Variation in Nigeria. *World Englishes 8(2),* 165177.

Adekunle, M. A. (1974). The Standard Nigerian English. *In Journal of the Nigeria English Studies Association. (JNESA). 6(1),* 33-47.

Adekunle, M. A. (1985). *The English Language in Nigeria as a Modern Nigerian Artifact.* Jos, Nigeria: University of Jos Press.

Adetugbo, A. (1977). Nigerian English: Fact or Fiction? *Lagos Notes and Records*: *A Journal of African Studies*, 128-141.

Adetugbo, A. (2004). Problems of Standardization and Nigerian English phonology. In Kofi Dadzie and Segun Awonusi (eds.), *Nigerian English: Influence and Characteristics* 179-199, Lagos: Concept Publication.

Ahmad, J. (2011). Pronunciation Problems among Saudi Learners: A Case Study at the Preparatory Year Program, Najran University Saudi Arabia. *Language in India. 11(7),* 22-36.

Ajani, T. T. (2007). Is There Indeed a 'Nigerian English'. Retrieved 20 December, 2013 from http://www.scientificjournals.org/journals2007/articles/1084.htm.

Akere, F. (1982). Sociocultural Constraints and the Emergence of a Standard Nigerian English. In J. B. Pride (Ed.) *New Englishes*, 85-89.

Akeredolu-Ale, B. I. (2005). Remedying Some Basic Pronunciation Errors Through Perception and Production Drills: A Teacher's Report. *English Language Teaching Today, 4 (1),* 51-59.

Akinjobi, A. (2002). Nigerian English or Standard English Suprasegmentals: The Question of what Variety to Teach in Babatunde, S & D. Adeyanju. *Language Meaning and Society.* Ilorin: Hatee Press. 30-50.

Akpan, C. S., Anorue, L. I., Obayi, P. M., & Etu, M. (2012). *An International Journal of Language, Literature and Gender Studies 1(3),* 48-68.

Aladeyomi, S. A., & Adetunde, A. K. (2007). Errors of Segmental Phonemes in the Spoken English of Nigerian English Newscasters. *Medwell Journal: The Social Sciences 2,* 302-6.

Al-Saidat, M. E. (2010). Phonological Analysis of English Phonotactics: A Case Study of Arab Learners of English. *The Buckinghum Journal of Language and Linguistics* 3, 121-134.

Altaha, F. M. (1995). Pronunciation Errors Made by Saudi University Students Learning English: Analysis and Remedy. *International Review of Applied Linguistics 109,* 110-123.

Ammar, W., & Alhumaid, A. (2009). A Phonetic Study of Najdi Arabic Interference in L2 Acquisition of English. *Arab Journal for the Humanities, 27 (108),* 213-235.

Archibald, J. (1998). *Second Language Phonology*. Amsterdam/Philadelphia, John Benjamin Publishing Company.

Atoye, R. (1991). Word Stress in Nigerian English. *World Englishes. 10(1),* 1-6.

Avery, P., & Ehrlich, S. (1992). *Teaching American English Pronunciation.* Oxford, England: Oxford University Press.

Awonusi, V. O. (1986). Regional Accents and Internal Variability in Nigerian English: A Historical Analysis. *English Studies 67,* 555-560.

Awonusi, V. O. (2004). Some Characteristics of Nigerian English Phonology. In Dadzie, A. B. K. & Awonusi, S. (eds*). Nigerian English. Influences and Characteristics.* Lagos: Concept Publishers 203-225.

Awonusi, V. O. (2007). Good Spoken English and National Development: Socio phonology in the Service of Man. Excerpts of Inaugural Lecture, University of Lagos, *Tell Magazine 19,* May 7, 2007.

Babatunde, S. T. (2002). World Englishes and the Paradox of English Language Teaching in Nigeria. In Babatunde, S. T. & Adeyanju, D. S. (eds.). *Language, Meaning & Society. Papers in Honour of E. E. Adegbija at 50.* Ilorin: Haytee Press & Publishing Co. Nig. Ltd. 69-95.

Baker, W., & Trofimoich, P. (2001). Does Perception Precede Production? Evidence from Korean-English Bilinguals. In R. M. Brend & A. R. Lommel (Eds.), *The XXVII LUCAS forum 2001, 273-284*. Lake Bluf, IL: Linguistic Association of Canada and the United States.

Ballard, K. (2007). The Frameworks of English (Second Edition). Palgrave Macmillan.

Balogun, I. O. (1980). Varieties of English in Nigeria. Its Implication for Development Reading. *In JLAC 45-53.*

Bamgbose, A. (1982). Languages in Contact: Yoruba and English in Nigeria, *Education and Development.* 2(1), 329-341.

Bamgbose, A. (1982). "Standard Nigerian English: Issues of Identification". In Braj. B. Kachru (Ed.) *The Other Tongue: English Across Cultures*. Urbana: University of Illinois Press.

Bamgbose, A. (1995). "English in the Nigerian Environment". In Ayo Bamgbose; Ayo Banjo and Andrew Thomas (eds.*). New Englishes: A West African Perspective* 9-26. Ibadan: Mosuro Publishers.

Bamgbose, A. (2001). *Language Policy in Nigeria: Challenges, Opportunities and Constraints*. Paper Presented in Nigerian Sociolinguistics Conference.

Bamiro, E. (1991). Nigerian Englishes in Nigerian English Literature. *World Englishes. 10(1),* 7-17.

Banjo, A. (1971). Towards a Definition of Standard Nigerian Spoken English. Annales de 'Universite d' Abidjan, 24-28.

Banjo, A. (1993). An Endonormative Model for the Teaching of English in Nigeria. *International Journal of Applied Linguistics 3*, 261-75.

Banjo, A. (1996). *Making a Virtue of Necessity. An Overview of the English Language in Nigeria*. Ibadan: Ibadan University Press.

Best, C. (1994). The Emergence of Native Language Phonological Influences in Infants: A Perceptual Assimilation Model. In Goodman, C. & Nasbaum, H. (eds.), *The Development of Speech Perception: The Transition from Speech Sounds to Spoken Words*, 167-224. Cambridge MA: MIT Press.

Best, C. (1995). A Direct Realist View of Cross-language Speech Perception. In Strange, W. (ed.), *Speech Perception and Linguistic Experience: Issues in Cross-language Research,* 171-204. Timonium MD: York Press.

Binturki, T. A. (2008). *Analysis of Pronunciation Errors of Saudi ESL Learners*. M A Dissertation, Southern Illinois University, USA.

Birdsong, D. (2007). 'Native-like Pronunciation among Late Learners.' In Bohn & Munro (eds) *Second Language Speech Learning: In honor of James Emil Flege.* Amsterdam/Philadelphia: John Benjamin Publishing Company, 99-114.

Bobda, A. S. (1995). The Phonologies of Nigerian English and Cameroon English. In Ayo Bamgbose, Ayo Banjo and Andrew Thomas (eds.), *New Englishes: A West African Perspective* 248-268. Ibadan: Mosuro Publishers.

Bobda, A.S. (2000). Comparing Some Phonological Features across African Accents of English, *English Studies, 81(3),* 249-266.

Bobda, A. S. (2007). Some Segmental Rules of Nigerian English Phonology. *English World-Wide 28,* 279-310.

Bokamba, E. (1982).”The Africanization of English”. In Braj. B. Kachru, *The Other Tongue: English Across Cultures.* Urbana: University of Illinois Press.

Bokamba, E. (1991). West Africa (Overview article). In Jenny Cheshire (Ed.), 493-508.

Bradlow, A. R., Pisoni, D. B., Akahane-Yamada, R., & Tohkura, Y. (1997). Training Japanese Listeners to Identify English /r/ and /l/: IV. Some Effects of Perceptual Learning on Speech Production. *Journal of the Acoustic Society of America, 101,* 2299-2310.

Brosnahan, L. F. (198). English in Southern Nigeria. *English Studies 39,* 97-110.

Brown, C. (1998). The Role of the L1 Grammar in the L2 Acquisition of the Segmental Structure. *Second Language Research, 14 (2),* 136-193.

Brown, C. (2000). The Interrelation between Speech Perception and Phonological Acquisition from Infant to Adult. In Archibald, J. (ed.), *Second Language Acquisition and Linguistic Theory,* 4-63. Malden Mass: Blackwell. Acquisition. TESOL Quarterly *8(2),* 129-136.

Chan, A. Y., & Li, D. C. (2000). English and Cantonese Phonology in Contrast: Explaining Cantonese ESL Learners’ English Pronunciation Problems. *Language Culture and Curriculum, 13(1),* 67-85.

Chan, C. P. H. (2001). The Perception (and Production) of English Word-Initial Consonants by Native Speakers of Cantonese. Hong Kong Journal of Applied Linguistics, 6(1), 26-44.

Chan, A. Y. (2006). Cantonese ESL Learners’ Pronunciation of English Final Consonants. *Language, Culture and Curriculum, 19 (3),* 296-313.

Chan, A. Y. W. (2007a). Perception of English Speech Sounds by Cantonese ESL Learners. Paper Presented at *Malaysia International Conference on Languages, Literatures and Cultures 2007,* Holiday Villa, Subang, Malaysia, 22-24 May 2007.

Chan, A. Y. W. (2007). The Acquisition of English Word-final Consonants by Cantonese ESL Learners in Hong Kong. *Canadian Journal of Linguistics, 52,* 231-253.

Chan, A. Y. (2011). The Perception of English Speech Sounds by Cantonese ESL Learners in Hong Kong. *TESOL Quarterly*, *45(4)*, 718-748.

Cook, V. J. (1992). "Evidence for Multi-competence". *Language Learning*, *42*, *4*, 557-591.

Derwing, T. M. & Rossiter, M. J (2002). ESL Learners' Perception of their Pronunciation needs and Strategies. *System, 30(2), 155-166.*

Eckman, F. R. (1977). Markedness and the Contrastive Analysis Hypothesis. *Language Learning*: A Journal of Research in Language Studies, *27 (2)*, 315-30.

Eckman, F. R. (2004). From Phonemic Differences to Constraint Rankings: Research on Second Language Phonology. *Studies in Second Language Acquisition*, *26 (4)*, 513-549.

Eckman, F., Abdullah, E. & Gregory, K. I. (2003). Some Principles of Second Language Phonology. *Second Language Research*. *19 (3)*. 169-208.

Eka, D. (1985). Phonological Study of Standard Nigerian English. Unpublished Ph.D. Dissertation, Ahmadu Bello University (ABU), Zaria.

Eka, D. (2000). *Issues in Nigerian English Usage*. Uyo, Scholar Press (Nig) Ltd. Emeka-Nwobia, N. U. (2013). Errors of Nigerian Radio Newscasters: A Phonological Analysis. *Global Journal of Applied, Management and Social Sciences (GOJAMSS), 4.* 164-171.

Emeka-Nwobia, N. (2013). Errors of Nigerian Radio Newscasters: A Phonological Analysis. *Global Journal of Applied, Management and Social Sciences (GOJAMSS); 4,* 164-171.

Fakoya, A. A. (1989). *Describing Nigerian English Phonology: A Step Further*. Paper Presented at the XIXth Annual Conference of the Nigeria English Studies Association at the University of Ibadan.

Eyisi, J. (2007). *Phonetics of English*. Awka: Scoa Heritage Systems.

Flege, J. E. (1984). The Detection of French Accent by American Listeners. *Journal of the Acoustical Society of America, 76(3), 692-707.*

Flege, J. E. (1987). The Production of the "new" and "similar" Phones in a Foreign Language: Evidence for the effect of Equivalence Classification. *Journal of Phonetics, 15, 47-65.*

Flege, J. E. (1992). Speech Learning in a Second Language. In C. Ferguson, et al. (eds.) *Phonological development: Models, Research and Application*. Timonium, MD: York Press.

Flege, J. E. (1995). Second Language Speech Learning: Theory, Findings, and Problems. In Strange, W. (ed.), *Speech Perception and Linguistic Experience: Issues in Cross-language Research,* 233-277. New York: Timonium, MD.

Flege, J. E. (1999). The Relation between L2 Production and Perception. In J. J Ohala & Y. Hasegawa & M. Ohala & D. Granville & A. C. Bailey (Eds.), *Proceedings of the XIVth International Congress of Phonetic Sciences 2, 1273-1276.* Berkeley, CA: University of California.

Flege, J. E., Bohn, O. S., & Jang, S. (1997). Effects of Experience on Non-native Speakers' Production and Perception of English Vowels. *Journal of Phonetics, 25, 437-470.*

Flege, J. E., Mackay, I. R. A., Meador, D. (1999). Native Italian Speakers' Perception and Production of English Vowels. *Journal of the Acoustical Society of America, 106(5), 2973-2987.*

Flege, J. E., & Mackay, I. R. A. (2004). Perceiving Vowels in Second Language. *Studies in Second Language Acquisition, 26, 1-34,* doi: 10. 1017/S0272263104261010.

Fulk, R. D. (2008). English as a Germanic Language. In Momma. H, & Matto. M (Eds.), *A companion to the history of the English language* 142-149. Wiley-Blackwell, Oxford, UK.

Gonet, W., & Pietron, G. (2006). English Interdental Fricatives in the Speech of Polish Learners of English. *Dydaktyka fonetyki jezyka obcego. Neofilologia, 8,* 73-86.

Graddol, D. (1997). The Future of English? : *A Guide to Forecasting the Popularity of the English Language in the 21st Century.* London: British Council.

Greenberg, J. H. (1963). *The Languages of Africa*. Bloomington, Indiana University.

Gut, U. (2004). Nigerian English Phonology. In Bernd Kortman and Edgar W. Schneider (eds.), *A Handbook of Varieties of English*, 813-30. Amsterdam: Mouton de Gruyter.

Gut, U. (2008). Nigerian English: Phonology. *Varieties of English, 4: Africa, South and Southeast Asia*, 35-54.

Ha, C. C. (2001). 'The Perception (and Production) of English Word-initial Consonants by Native Speakers of Cantonese.' *Hong Kong Journal of Applied Linguistics 6 (1)*: 26-44.

Hansen, J. G. (2004). Developmental Sequences in the Acquisition of English L2 Syllable codas: A Preliminary Study. *Studies in Second Language Acquisition, 26(01),* 85-124.

Harris, J. (1996). On the Trail of Short "u". *In English World-Wide 17(1),* 1-42.

Hanulikova, A., & Weber, A. (2010). Production of English Interdental Fricatives by Dutch, German, and English Speakers. In *Proceedings of the 6th International Symposium on the Acquisition of Second Language Speech, New Sounds* 173-178.

Hottari, K., & Iversion, P. (2010). Examination of the Relation between L2 Perceptions and Production: An Investigation of English /r/-/l/ Perception and Production by Adult Japanese Speakers. In *Interspeech Workshop on Second Language Studies: Acquisition, Learning, Education and Technology. Tokyo, Japan, Waseda University.*

Hughes, J. A. (1962). *The Science of Language* (New York: Random House).

Hugo, B. B. (1982). Bilingualism: Basic Principles. Avon, Tieto Ltd.

Ikani, F. E. (2004). Some Areas of the Igala Learners of English: A Contractive Analysis In: M Eattah (Ed.) *Language and Literature in Education for a Better Society: The challenges of the 21st century,* Nsukka great AP Express Limited. Nsukka-Nigeria.

Ingram, J. C. L., & Park, S. G. (1997). Cross-language Vowel Perception and Production by Japanese and Korean Learners of English. *Journal of Phonetics, 25*, 343-370, doi: 10. 1006/jpho.1997.0048.

Iyare, T. (2013). Pronunciation Challenges of Open and Distance Learning Students in the B.A English Programme at the National Open University of Nigeria. *International Journal of English and Literature 4 (5),* 217-221.

Jaggar, P. J. (2010). The Role of Comparative/Historical Linguistics in Reconstructing the Past: What Borrowed and Inherited Words Tell us about the Early History of Hausa, 1-17.

Jaggar, P. (2001). *A Reference Grammar of Hausa*. Philadelphia Pennsylvania: John Benjamins.

Jibril, M. M. (1979). Regional Variation in Nigeria Spoken English in Ubahakwe, E. (Ed). *Varieties and Function of English in Nigeria*. Ibadan, Africa University Press.

Jibril, M. (1982). "Nigerian English: An Introduction". In J. B. Pride (Ed.) *New Englishes*, 73-84.

Jibril, M. (1982). *Phonological Variation in Nigerian Spoken English*. PhD, University of Lancaster.

Jibril, M. (1986). Sociolinguistics Variation in Nigerian English. *English Worldwide. 7*, 47-75.

Jibril, M. (1986). Phonological Variation in Nigerian English, in Ubahakwe, E. (ed). *Varieties and Function of English in Nigeria*, 43-53.

Jones, D. (1969). *An Outline of English Phonetics*. Haffer Cambridge: Cambridge University Press.

Josiah, U. E. (2009). A Synchronic Analysis of Assimilatory Processes in Educated Nigerian Spoken English. Unpublished Ph. D Dissertation, University of Ilorin.

Josiah, Ubong E. (2001). "Aspiration in Nigerian: Controversies and Challenges". In: Udofot, I. M. & Udoudom, J. (eds.). *English Usage in Nigeria Since 1842: Patterns and Change. A Festschrift for Prof David Eka. Uyo: Devconsort Service Ltd.*

Josiah, U. E. & Babatunde, S. T. (2011). Standard Nigerian English Phonemes: The Crisis of Modelling and Harmonization. *World Englishes, 30(4),* 533-550.

Josiah, U., Bodunde, H. & Robert, E. (2012). Patterns of English Pronunciation among Nigerian University Undergraduates: Challenges and Prospects. *International Journal of Business, Humanities and Technology 2(6),* 109-117.

Jowitt, D. H. (1991). *Nigerian English Usage: An Introduction*. Lagos: Longman Nigeria Plc.

Jowitt, D. H. (2000). Patterns of Nigerian English Intonation. *English World-Wide 21*, 63-80.

Kachru, B. (1992). World Englishes. In *Language Teaching*. Cambridge: Cambridge University Press.

Kanokpermpoon, M. (2007). Thai and English Consonantal Sounds: A Problems or a Potential for EFL Learning? *ABAC Journal 27(1)*, 57-66.

Kettemann, B., & Wieden, W. (Eds.). (1993). *Current Issues in European Second Language Acquisition Research* 378. Gunter Narr Verlag.

Kluge, D. C., Rauber, A. S., Reis, M. S. & Bion, R. A. H. (2007). The Relationship between the Perception and Production of English Nasal Codas by Brazilian Learners of English. *Interspeech 2007 Antwerp Belgium.*

Koerich, R. D. (2002). *Perception and Production of Word-final Vowel Epenthesis by Brazilian EFL Students.* Unpublished Doctoral Dissertation. Florianopolis: Universidade Federal de Santa Catarina.

Kraft, C. H., & Kraft, M. G. (1973). *Introductory Hausa*. Berkeley and Los Angeles, California University of California Press, Ltd.

Kujore, O. (195). *English Usage*: Some Notable Nigerian Variations. Ibadan: Evans Brothers Ltd.

Lado, R. (1957). *Linguistics across Cultures*: Applied Linguistics for Language Teachers. Ann Arbor: University of Michigan Press.

Maddieson, I. (1984). *Patterns of Sounds.* Cambridge; New York: Cambridge University Press.

Messiha, G. Z. (1985). Some Phonological Problems That Face Arab Learners of English. *Studies in African Linguistics, 9* (Dec), 224-227.

Munro, M. J., & Derwing, T. M. (1995). Foreign Accent, Comprehensibility, and Intelligibility in the Speech of Second Language Learners. *Language Learning, 45 (1),* 73-97.

Nuhiu, M. (2013). Difficulties of Albanian Speakers in Pronouncing Particular English Speech Sounds. *Procedia- Social and Behavioral Sciences 70,* 1703-1707.

Odlin, T. (1989). *Language transfer: cross-linguistics influence in language learning*. Cambridge: Cambridge University Press.

Odumuh, A. (1987). *Nigerian English (NigE)*. Zaria, Nigeria: Ahmadu Bello University Press Ltd.

Odumuh, A. (1993). *Sociolinguistics and Nigerian English*. Ibadan: Sam Bookman.

Ofulue, C. I. (2007). The Oral Communication Component of EAP: Theory or Practice? *English Language Teaching Today*. *6*, 11-25.

Ogu, J. (1992). *A Historical Survey of English and the Nigerian Situation*. Lagos: Kratfs Books Ltd.

Okoro, O. (2004). Codifying Nigerian English: Some Practical Problems and Labelling. In Segun Awonusi, and Emmanuel A. Babalola (eds.), *The Domestication of English Nigeria: A Festschrift in Honour of Abiodun Adetugbo* 166-81. Lagos: University of Lagos Press.

Oladimeji, O. (2013). Segmental Phoneme Articulation as a Means of Identifying Nigerian Speakers of English. *CENTREPOINT JOURNAL (Humanities Edition), 15(2),* 110-132.

Olumola, Michael. (1982). *Nigerian History*. Lagos: Longman Publishers.

Osborne, D. M. (2010). The Production of Rhotic Sounds by Brazilian Speakers of English. *Arizona Working Papers in SLA & Teaching 17*, 1-25.

Owolabi, D. (2012). Production and Perception Problems of English Dental Fricatives by Yoruba Speakers of English as a Second Language. *Theory and Practice in Language Studies, 2(6),* 1108-1113.

Pater, J. (2003). The Perception Acquisition of Thai Phonology by English Speakers: Task and Stimulus Effects. *Second Language Research, 19,* 209-223.

Patrick, J. M., Education, M. M., & Sui, M. (2013). Mother-Tongue Interference on English Language Pronunciation of Senior Primary School Pupils in Nigeria: Implication for Pedagogy. *Language in India 13(8),* 281-298.

Porte, G. K. (2002). *Appraising Research in Second Language Learning: A Practical Approach to Critical Analysis of Quantitative Research.* Philadelphia: John Benjamins.

Proctor, M. (2004). *Production and Perception of AusE Vowels by Vietnamese and Japanese ESL Learners.* Paper Presented at the 2004 Australian Linguistics Society Annual Conference, University of Sydney, Sydney, Australia, 13-15 July 2004.

Rehman, G., Khan, A., & Bukhari, N. H. (2012). English Problematic Consonants for Pashto Speakers. *Academic Research International, 2(1),* 695-704.

Salami, A. (1968). "Defining a Standard Nigerian English". *In JNESA.* 2(2), 99-106.

Sani, M. A. Z. (2005). *An Introductory Phonology of Hausa*. Benchmark Publishers Limited.

Schmid, P., & Yeni-Komshian, G. (1999). The Effects of Speaker Accent and Target Predictability on Perception of Mispronunciation. *Journal of Speech, Language, and Hearing Research, 42*. 56-64.

Simon, E. (2009). Acquiring a New Second Language Contrast: An Analysis of the English Laryngeal System of First Language Dutch Speakers. *Second language Research, 25(3),* 377-408.

Syed, N. A. (2013). Acquisition of English Dental Fricatives by Pakistani Learners. *Newcastle working papers in Linguistics, 19 (2),* p. 64-78.

Taiwo, R. (2009). The Functions of English in Nigeria from the Earliest Times to the Present Day. *English Today*, 25, pp 3-10 doi: 10. 1017/S0266078409000121.

Tam, H. C. (2005). Common Pronunciation Problems of Vietnamese Learners of English. *Journal of Science. Foreign Languages*, T. XX1, *(1),* 35-46.

Tiono, N. I., & Yosta, A. M. (2008). A Study of English Phonological Errors Produced by English Department Students. *K@ta, 10 (1),* 79-112.

Udofot, I. M. (1997). *The Rhythm of Spoken Nigerian English*. PhD, University of Uyo.

Udofot, I. M. (2004). Varieties of Spoken Nigerian English. In Segun Awonusi and Emmanuel A. Babalola (eds.), *The Demestication of English in Nigeria. A Festschrift in Honour of Abiodun Adetugbo* 93-113. Lagos: University of Lagos Press.

Udofot, I. M. (2007). A Tonal Analysis of Standard Nigerian English. In Udofot, I. *Journal of the Nigerian English Studies Association. 3(1)*, 58-68.

UNESCO (2003). Education in a Multilingual World. Paris, UNESCO. (UNESCO Education Position Paper) http://unesdoc.unesco.org/image001297/129728e.pdf.

Vincent, T. (1974). Register in Achebe. In *JNESA*, 95-106.

Wachuku, U. (2004). Teaching English Pronunciation at Secondary School Level. *Nka: A Journal of the Arts, 4*, 5-19.

Wahba, E. (1998). Teaching Pronunciation-Why? *Language Teaching Forum, 36*, 3-32.

Wardhaugh, R. (1970). ‘The Contrastive Analysis Hypotheses. *TESOL Quarterly 4*, 123-130.

Wester, F., Gilbers, D. & Lowie, W. (2007). Substitution of Dental Fricatives in English by Dutch L2 Speakers. *Language Sciences, 29(2-3),* 477-491.

Whong-Barr, M. (2006). What Transfers? *Paths of Development in L1 and L2 Acquisition, Amsterdam: John Benjamins Publishing Company,* 187-199.

Wilkins, D. A. (1972). *Linguistics in Language Teaching*. 197-98. London, Edward Arnold.

Wong, R. (1987). *Teaching Pronunciation:* Focus on English Rhythm and Intonation. Englewood Cliffs, NJ: Prentice Hall Regents.

Yule, G. (1985). *The Study of Language*. Cambridge: Cambridge University Press.

CONSENT FORM

TO: …….

FROM: Alhaji Maiunguwa

Subject: Request for assistance in a research on perception and production of English fricatives by Hausa speakers.

Dear ……

I would like to request your cooperation in a research to investigate and identify the difficulties faced by Nigerian Hausa speakers of English in the perception and production of English fricative sounds in order: To study the relationship between perception and production of second language sounds. To identify the areas that appear problematic to Hausa speakers of English.

Respondents of this research will be listen stimuli and read word lists individually and audiotaped to retrieve the relevant points.

Any data that I collect from you will be treated in strict confidence. All recordings will be used by me only for interpretation of the results. To ensure anonymity, no names will be mentioned when I write the report. All personal identification will be kept strictly confidential and no one will be censured for negative reviews.

If you agree, kindly complete the section below, detach it and return it to me.

Many thanks for helping me to improve my research.

Yours Sincerely,

Alhaji Maiunguwa

Master student

Faculty of Languages and Linguistics

University of Malaya.

CONSENT FORM

Date…….

Time…….

Name……

Email……

Phone No……

Signature……..

CONSENT FORM

Date…….

Time…….

Name……

Email……

Phone No……

Signature……..

APPENDIX A

Questionnaire

Demographic Information

Dear participants,

Warmest greetings of the day.

I am a master student of the faculty of Languages and Linguistics University of Malaya invite you to participate in this research on perception and production of English fricatives by Hausa speakers. Kindly spend a few precious minutes to answer this questionnaire. I will treat your response as anonymous and solely use it for academic research purposes. The given information will help me to improve my research, which examines issues related to phonology and second language acquisition.

I would greatly appreciate it if you could help me and participate in the research.

Thank you.

Alhaji Maiunguwa

Please answer the following questions.

1. What is your gender?
   - Male
   - Female
2. How old are you?
   ---
3. In what country did you grow up?
   - Nigeria
   - Other----------
4. What is your highest level of education?
   ---
5. For how long have you been learning English?
   ……
6. How long have you been living in Malaysia?
   ……

APPENDIX B

Identification Test

1. **V**oice
2. **Th**at
3. Brea**th**e
4. **Th**eme
5. Sha**v**e
6. Bo**th**
7. **Th**read
8. Ca**v**e
9. **V**est
10. Dea**th**
11. **Th**en
12. **V**ocal
13. Fif**th**
14. **Th**ese
15. Boo**th**
16. Pro**v**e
17. **Th**ere
18. Mo**v**e
19. **Th**reat
20. See**th**e
21. **V**iew
22. Oa**th**
23. Wi**th**
24. Lea**v**e
25. **Th**ree
26. **Th**ey
27. Smoo**th**
28. **V**an
29. Bir**th**
30. **Th**ought

APPENDIX C

University of Malaya

Researcher: Alhaji Maiunguwa

Supervisor: Dr. Roshidah Hassan

N:

Participant's name…….

ANSWER SHEET

You are going to hear pronunciation of English words. Please write down the words on the answer sheet in the relevant columns.

1.		16.	
2.		17.	
3.		18.	
4.		19.	
5.		20.	
6.		21.	
7.		22.	
8.		23.	
9.		24.	
10.		25.	
11.		26.	
12.		27.	
13.		28.	
14.		29.	
15.		30.	

APPENDIX D

AX Discrimination Test

1.	Ba**th**	Ba**th**
2.	**V**est	Best
3.	**Th**ree	**Th**ree
4.	Mo**v**e	Mob
5.	**V**at	**V**at
6.	Seed	See**th**e
7.	**V**an	Ban
8.	**Th**in	**Th**in
9.	Day	**Th**ey
10.	Bought	Bo**th**
11.	Pro**v**e	Pro**v**e
12.	**Th**read	**Th**read
13.	**V**an	**V**an
14.	Ba**th**	Bat
15.	Li**v**e	Li**v**e
16.	Date	Dea**th**
17.	**Th**ere	Dare
18.	**V**est	**V**est
19.	Tree	**Th**ree
20.	Brea**th**e	Brea**th**e
21.	Tread	**Th**read
22.	Boys	**V**oice
23.	**Th**at	**Th**at
24.	Probe	Pro**v**e
25.	**Th**ey	**Th**ey
26.	**V**oice	**V**oice
27.	Wi**th**	Wi**th**
28.	Tin	**Th**in
29.	Mo**v**e	Mo**v**e
30.	Breed	Brea**th**e
31.	Bo**th**	Bo**th**

32. Dart	**Th**at
33. Dea**th**	Dea**th**
34. **Th**ere	**Th**ere
35. Wi**th**	Weed
36. Bat	**V**at
37. My**th**	My**th**
38. Boat	**V**ote
39. **Th**ose	Doze
40. See**th**e	See**th**e
41. **V**ote	**V**ote
42. Trill	**Th**rill
43. Loa**th**e	Loa**th**e
44. **Th**ink	**Th**ink
45. **Th**rice	Trice

APPENDIX E

University of Malaya

Researcher: Alhaji Maiunguwa

Supervisor: Dr. Roshidah Hassan

N:

Participant's name…….

ANSWER SHEET

You are going to hear sets of 2 words.

Tick '1' or '2'

Mark all the sequences.

Tick '1' if the first sound is different from the second sound;

Tick '2' if the sounds are the same.

	1	2
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
21.		
22.		
23.		
24.		
25.		
26.		
27.		
28.		
29.		
30.		
31.		
32.		
33.		
34.		
35.		
36.		
37.		
38.		
39.		
40.		
41.		
42.		
43.		
44.		
45.		

APPENDIX F

A 3 Alternative Forced Choice (3AFC) Discrimination Test

1.	**V**est	Best	First
2.	**V**an	Ban	Fan
3.	**Th**in	Tin	Sin
4.	Bo**th**	Bought	Boss
5.	See**th**e	Seed	Seize
6.	Dea**th**	Date	Daze
7.	Wi**th**	Weed	Whizz
8.	**Th**en	Den	Zen
9.	Ba**th**	Bat	Bus
10.	Brea**th**e	Breed	Breeze

APPENDIX G

University of Malaya

Researcher: Alhaji Maiunguwa

Supervisor: Dr. Roshidah Hassan

N:

Participant's name…….

ANSWER SHEET

You are going to hear sets of 3 words.

Tick '1', '2' or '3'

Mark all the sequences.

Tick '1' if the first sound is the same as the second sound;

Tick '2' if the first sound is the same as the third sound;

Tick '3' if the first sound is different from the second and third sounds.

	1	2	3
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

APPENDIX H

Read the following words in each list.

List A:

/v/

Positions

Initial

Voice

Vest

View

Van

Vocal

Final

Sha**v**e

Ca**v**e

Mo**v**e

Lea**v**e

Pro**v**e

List B:

/θ/

Positions

Initial

Thread

Theme

Threat

Thought

Three

Final

Dea**th**

Bo**th**

Oa**th**

Bir**th**

Fif**th**

List C:

/ð/

Positions

Initial

That

These

Then

They

There

Final

Boo**th**

See**th**e

Smoo**th**

Wi**th**

Brea**th**e

APPENDIX I

Speech Rating

Rate each speech from 5-1: 5 native-like, 4 near native-like, 3 different from natives but understandable, 2 hardly understandable and 1 unintelligible.

1.	5	4	3	2	1
2.	5	4	3	2	1
3.	5	4	3	2	1
4.	5	4	3	2	1
5.	5	4	3	2	1
6.	5	4	3	2	1
7.	5	4	3	2	1
8.	5	4	3	2	1
9.	5	4	3	2	1
10.	5	4	3	2	1
11.	5	4	3	2	1
12.	5	4	3	2	1
13.	5	4	3	2	1
14.	5	4	3	2	1
15.	5	4	3	2	1
16.	5	4	3	2	1
17.	5	4	3	2	1
18.	5	4	3	2	1
19.	5	4	3	2	1
20.	5	4	3	2	1

21.	5	4	3	2	1
22.	5	4	3	2	1
23.	5	4	3	2	1
24.	5	4	3	2	1
25.	5	4	3	2	1
26.	5	4	3	2	1
27.	5	4	3	2	1
28.	5	4	3	2	1
29.	5	4	3	2	1
30.	5	4	3	2	1

APPENDIX J

It has been stated in the methodology that 2 would be placed where an incorrect response was recorded, and correct responses were entered as 1.

Results: Identification Test

S/N	Words	Respondents				
	/v/ Initial	A	B	C	D	E
1	voice	1	1	1	1	1
2	Vest	2	1	2	1	1
3	view	1	1	1	1	1
4	van	1	1	1	1	1
5	vocal	1	1	1	1	1
	/v/ Final					
6	shave	1	1	1	1	1
7	cave	1	1	1	1	1
8	move	1	1	1	1	1
9	leave	1	1	1	1	1
10	prove	2	1	1	1	1
	/θ/ Initial					
11	thread	2	1	1	1	1
12	theme	1	1	1	1	1
13	threat	2	1	2	2	1
14	thought	1	1	1	1	1
15	three	2	1	1	1	1
	/θ/ Final					
16	death	1	1	1	1	1
17	both	2	1	1	1	1
18	oath	2	1	1	1	1
19	birth	2	1	1	1	1
20	fifth	1	1	1	1	1
	/ð/ Initial					
21	that	1	1	1	1	1
22	these	1	1	1	1	1
23	there	1	1	1	1	1
24	then	1	1	1	1	1
25	they	1	1	1	1	1
	/ð/ Final					
26	booth	1	1	1	1	1
27	seethe	2	1	2	2	2
28	with	1	1	1	1	1
29	smooth	1	1	1	1	1

30	breathe	1	1	1	1	1

APPENDIX K

Results: AX discrimination Test

S/N	Sequences		Respondents				
	/v/ Initial		A	B	C	D	E
1	Vat	vat	1	2	1	1	1
2	Van	van	2	1	1	1	2
3	vest	vest	1	1	1	1	1
4	voice	voice	1	1	1	1	1
5	vote	vote	2	1	1	1	1
6	vest	best	1	2	2	1	1
7	Van	ban	1	2	2	1	1
8	voice	boys	2	1	2	1	1
9	Vat	bat	1	2	1	1	1
10	vote	boat	1	1	2	1	1
	/v/	Final					
11	prove	prove	1	1	1	1	1
12	Live	live	2	1	1	1	1
13	move	move	2	1	1	1	2
14	move	mob	1	1	1	1	1
15	prove	probe	2	1	2	1	1
	/θ/	Initial					
16	three	three	2	2	1	1	1
17	Thin	thin	1	1	2	1	1
18	thread	thread	2	1	1	1	1
19	think	think	1	1	1	1	1
20	Tree	three	1	1	1	1	1
21	tread	thread	1	1	2	1	1
22	Tin	thin	1	2	1	1	2
23	Trill	thrill	1	1	1	1	1
24	Trice	thrice	2	1	2	1	1
	/θ/	Final					
25	Bath	bath	1	1	1	1	1
26	Both	both	1	1	1	1	1
27	death	death	2	1	1	1	1
28	myth	myth	1	1	1	1	1
29	bought	both	1	1	2	1	1
30	Bath	bat	1	1	2	1	1
31	Date	death	1	1	2	1	1
	/ð/	Initial					
32	That	that	1	1	1	1	1
33	they	they	2	1	1	1	1
34	there	there	2	1	1	1	2
35	Day	they	1	1	2	2	1

36	dare	there	1	2	2	1	1
37	dart	that	1	1	1	1	1
38	doze	those	1	1	2	1	1
	/ð/	Final					
39	With	with	2	1	1	1	1
40	breathe	breathe	2	2	1	1	1
41	seethe	seethe	2	1	1	1	1
42	loathe	loathe	1	2	1	2	1
43	Seed	seethe	1	1	1	1	1
44	breed	breathe	1	1	1	1	2
45	Weed	with	1	1	2	1	1

APPENDIX L

Results: 3 Alternative Forced Choice Discrimination Test

S/N	Sequences			Respondents				
	/v/			A	B	C	D	E
1	Vest	best	First	2	2	2	1	2
2	Van	ban	Fan	2	2	2	1	1
	/θ/							
3	Thin	Tin	Sin	1	2	1	1	1
4	Both	bought	boss	1	2	2	1	1
5	death	date	daze	1	1	1	1	1
6	Bath	bat	Bus	1	1	1	1	1
	/ð/							
7	then	den	Zen	2	1	2	1	1
8	seethe	Seed	Seize	1	1	1	1	1
9	with	Weed	Whizz	1	1	2	1	1
10	breathe	Breed	Breeze	1	1	1	1	1

APPENDIX M

Results: Production Test

Result of the Production Test of /v/ in Initial Position by Respondents

Respondent	Words	Score
A	Voice vest view van vocal	2 3 3 3 3
	Total	14
	Mean	2.8

Respondent	Words	Score
B	Voice vest view van vocal	4 4 4 4 4
	Total	20
	Mean	4

Respondent	Words	Score
C	voice vest view van vocal	3 3 4 4 3
	Total	17
	Mean	3.4

Respondent	Words	Score
D	voice vest view van vocal	3 3 3 4 3
	Total	16
	Mean	3.2

Respondent	Words	Score
E	voice vest view van vocal	4 4 4 3 4
	Total	19
	Mean	3.8

Result of /v/ in Final Position by Respondents

Respondent	Words	Score
A	shave cave move leave prove	3 3 3 4 3
	Total	16
	Mean	3.2

Respondent	Words	Score
B	shave cave move leave prove	3 3 4 3 3
	Total	16
	Mean	3.2

Respondent	Words	Score
C	shave cave move leave prove	3 3 4 3 3
	Total	16
	Mean	3.2

Respondent	Words	Score
D	shave cave move leave prove	3 3 4 4 4
	Total	18
	Mean	3.6

Respondent	Words	Score
E	shave cave move leave prove	3 4 4 4 3
	Total	18
	Mean	3.6

Result of /θ/ in Initial Position by Respondents

Respondent	Words	Score
A	thread theme threat thought three	2 3 3 2 2
	Total	12
	Mean	2.4

Respondent	Words	Score
B	thread theme threat thought three	3 3 2 2 3
	Total	13
	Mean	2.6

Respondent	Words	Score
C	thread theme threat thought three	2 3 2 2 3
	Total	12
	Mean	2.4

Respondent	Words	Score
D	thread theme threat thought three	3 4 3 3 4
	Total	17
	Mean	3.4

Respondent	Words	Score
E	thread theme threat thought three	3 4 4 4 4
	Total	19
	Mean	3.8

Result of /θ/ in Final Position by Respondents

Respondent	Words	Score
A	death	3
	both	2
	oath	2
	birth	2
	fifth	2
	Total	11
	Mean	2.2

Respondent	Words	Score
B	death	3
	both	3
	oath	3
	birth	3
	fifth	3
	Total	15
	Mean	3

Respondent	Words	Score
C	death	2
	both	2
	oath	2
	birth	2
	fifth	2
	Total	10
	Mean	2

Respondent	Words	Score
D	death	4
	both	4
	oath	4
	birth	4
	fifth	4
	Total	20
	Mean	4

Respondent	Words	Score
E	death both oath birth fifth	3 3 3 3 3
	Total	15
	Mean	3

Result of /ð/ in Initial Position by Respondents

Respondent	Words	Score
A	that these then they there	2 2 2 3 3
	Total	12
	Mean	2.4

Respondent	Words	Score
B	that these then they there	3 3 3 3 2
	Total	14
	Mean	2.8

Respondent	Words	Score
C	that these then they there	1 1 2 1 1
	Total	6
	Mean	1.2

Respondent	Words	Score
D	that these then they there	3 3 3 3 3
	Total	15
	Mean	3

Respondent	Words	Score
E	that these then they there	3 3 3 3 3
	Total	15
	Mean	3

Result of /ð/ in Final Position by Respondents

Respondent	Words	Score
A	booth seethe smooth with breathe	2 2 2 2 2
	Total	10
	Mean	2

Respondent	Words	Score
B	booth seethe smooth with breathe	3 2 3 3 2
	Total	13
	Mean	2.6

Respondent	Words	Score
C	booth seethe smooth with breathe	1 1 1 1 1
	Total	5
	Mean	1

Respondent	Words	Score
D	booth seethe smooth with breathe	3 2 3 3 3
	Total	14
	Mean	2.8

Respondent	Words	Score
E	booth seethe smooth with breathe	3 3 3 4 4
	Total	17
	Mean	3.4